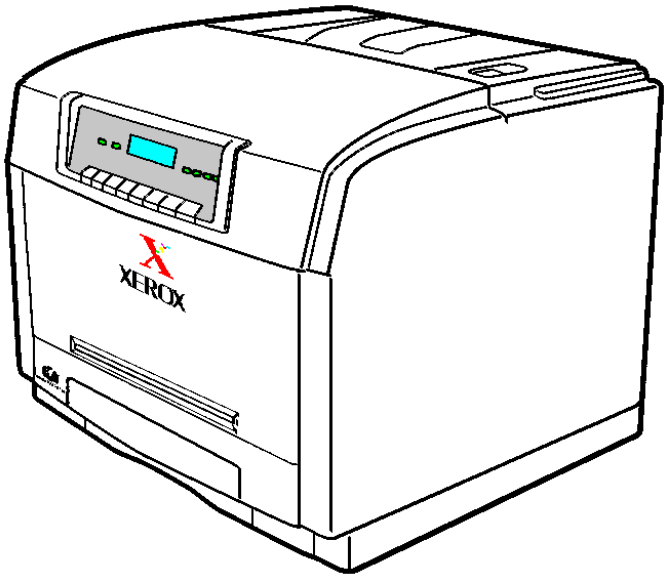
DocuPrint C55/C55mp/[NC60]

Color Laser Printer

(50/60 Hz)

Service Manual



CAUTION

Certain components in the DocuPrint C55/C55mp/[NC60] *Color Laser Printers are susceptible to damage from electrostatic discharge. Observe all ESD procedures to avoid component damage.*

701P14760
February, 1999

NOTICE

"All Service documentation is supplied to Xerox external customers for informational purposes only. Xerox Service Documentation is intended for use by certified, product trained personnel only. Xerox does not warrant or represent that such documentation is complete, nor does Xerox represent or warrant that it will notify or provide to such customer any future changes to this documentation. Customer performed service of equipment, or modules, may affect the warranty offered by Xerox with respect to such equipment. You should consult the applicable warranty for its terms regarding customer or third party provided service. If the customer services such equipment, modules, components or parts thereof, the customer releases Xerox from any and all liability for the customer actions, and the customer agrees to indemnify, defend and hold Xerox harmless from any third party claims which arise directly or indirectly from such service."

Prepared by:
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CLASS 1 LASER PRODUCTS

This product is certified as a Class 1 Laser product and complies with DHHS Laser-Radiation Standards, 21 CFR Chapter 1 Sub-chapter J.

WARNING

Use of controls, adjustments, or performances of procedures other than those specified in this manual may result in hazardous radiation exposures.

The C55/C55mp/[NC60] each contain an invisible laser. There is no visual indication that the laser beam is present. During servicing, the C55/C55mp/[NC60] remain a Class 1 product because of the interlock system. Do not attempt to cheat the interlock switches on this printer.

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ABOUT THIS MANUAL

This manual is part of a multinational documentation system which includes Training.

This manual contains information that applies to:

- **USCO**
- **XE**
- **XCL**
- **ACO**

This service manual covers both the C55 and NC60 product families.

Unique NC60 directions will be given in [ ]s. For example:

Press the **On Line [0]** key.

The **On Line** key is unique to the C55 family and the **[0]** key is unique to the NC60.

If the entire procedure is unique to a product family, it will be noted at the top of the page and in the footer at the bottom of the page.

“USCO” references apply to 115 Volt printers.

“XE” references apply to 220/240 Volt printers.

“Dry Ink” means the same as “Toner” and “Tag” means the same as “Mod”.

ORGANIZATION

This manual is divided into seven sections organized as follows:

A Publications comment sheet is provided at the end of this manual.

Section 1 - SERVICE CALL PROCEDURES

This section contains the following:

- Call Flow Instructions
- Initial Actions
- System Checks
- Every Call Activities
- Scheduled Maintenance
- Final Action

Call Flow

The call flow chart shows you how to conduct the service call.

Initial Actions

The initial actions suggests how to collect data necessary to proceed with the service call.

System Checks

The System Checks procedures details the steps for effective repair and verification of repair of problems found in Initial Action.

Every Call Activities

These are cleaning and maintenance activities which are performed on every call.

Scheduled Maintenance

Scheduled Maintenance consists of checking the life remaining on the CRUs.

Final Action

Final Action ensures that image quality is acceptable, and that printer performance and appearance is satisfactory. Details are included for completing administrative tasks and closing out the service call.

Section 2 - STATUS INDICATOR REPAIR ANALYSIS PROCEDURES (RAPs)

This section contains the Repair Analysis Procedures (RAPs) necessary to repair faults other than image quality faults.

Section 3 - IMAGE QUALITY REPAIR ANALYSIS PROCEDURES (RAPs)

This section contains the Repair Analysis Procedures (RAPs) necessary to repair image quality faults.

Section 4 - REPAIR/ADJUSTMENT PROCEDURES

This section contains the Repair and Adjustment procedures for the printer. All unique procedures will be identified as follows:

- **USCO**
- **XE**

Section 5 - PARTS LIST

This section contains exploded view drawings and referenced replaceable parts lists for the Printer.

Section 6 - GENERAL PROCEDURES

This section contains Diagnostic procedures, Menus, Product Specifications, ESS/IOT test patterns, and other General Procedures.

Section 7 - WIRING DATA

This section contains Block Schematic Diagrams (BSDs), Plug/Jack/PWB Location Diagrams and wiring diagrams.

HOW TO USE THIS MANUAL

Section 1, Service Call Procedures will direct you to each section of the manual necessary to perform a service call.

You will begin with Initial Actions which suggest how to collect problem symptoms and evidence to be used in the next section, the System Checks Section.

Details in the System Checks are designed to assist you in classifying, repairing and verifying the repair of the problem. From here, you may be directed to any of the other six sections of the service manual depending on the symptoms observed and the results of suggested tests. After a repair has been verified (or during a repair activity) instructions are included to direct you into Every Call Activities.

REFERENCE SYMBOLOGY

Reference Symbology provides supportive data for Repairs, Adjustments, and the RAPs. The symbols that refer to this supportive data are shown in the paragraphs that follow.

Note:



This symbol is used to refer to notes, usually found on the same page.

Parts Lists

PL 2.4 (example)

In the example above, the parts list reference and the exploded view drawing would be found in Section 5 on sub-section 2.4.

Descriptions of commonly used graphic symbols are included in order to aid troubleshooting when using the circuit diagrams.

Switches/Relays



Safety interlock switch, circuit open.



Safety interlock switch, circuit closed.



Switch/relay with momentary contacts shown normally open.



Switch/relay with momentary contacts shown normally closed.



Magnetically actuated Switch.

Miscellaneous Symbols



A flag that identifies a wire that has been referred to in the text.

[**8-2**] Indicates a Diagnostic Code used to check a particular component.



Identifies a test point, test hole or test stake on a PWB.



Auditron/Key Counter connection.



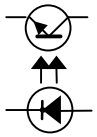
This symbol, used with a number, indicates that the actual number may be equal to or very near the value of the designated number.



Triac, used to switch AC power.



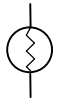
Light Emitting Diode (LED).



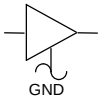
Led/Phototransistor Sensor.



Motor.



Thermistor Bead, used to sense temperature.



A Driver which is used to switch on DC Components.



Analog to Digital Converter.



Relay



Solenoid

Signal Continuation/Flow



Indicates the continuation of a signal line interrupted in a horizontal direction.



Represents the continuation of a standby power line interrupted in the vertical direction. In all cases, the supply is from Standby Power

Indicates a feedback signal.

Indicates a common splice of wires.



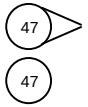
Indicates a common splice of wires at a pin.

Indicates the direction of signal flow.

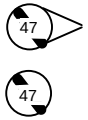


Indicates that the wire continues to the adjacent page.

Tag Identification



This **WITH TAG** Symbol is used to identify the components or configuration that are part of a printer change covered by the Tag number.



This **WITHOUT TAG** Symbol is used to identify the components or configuration that are not part of a printer change covered by the Tag number

1. SERVICE CALL PROCEDURES

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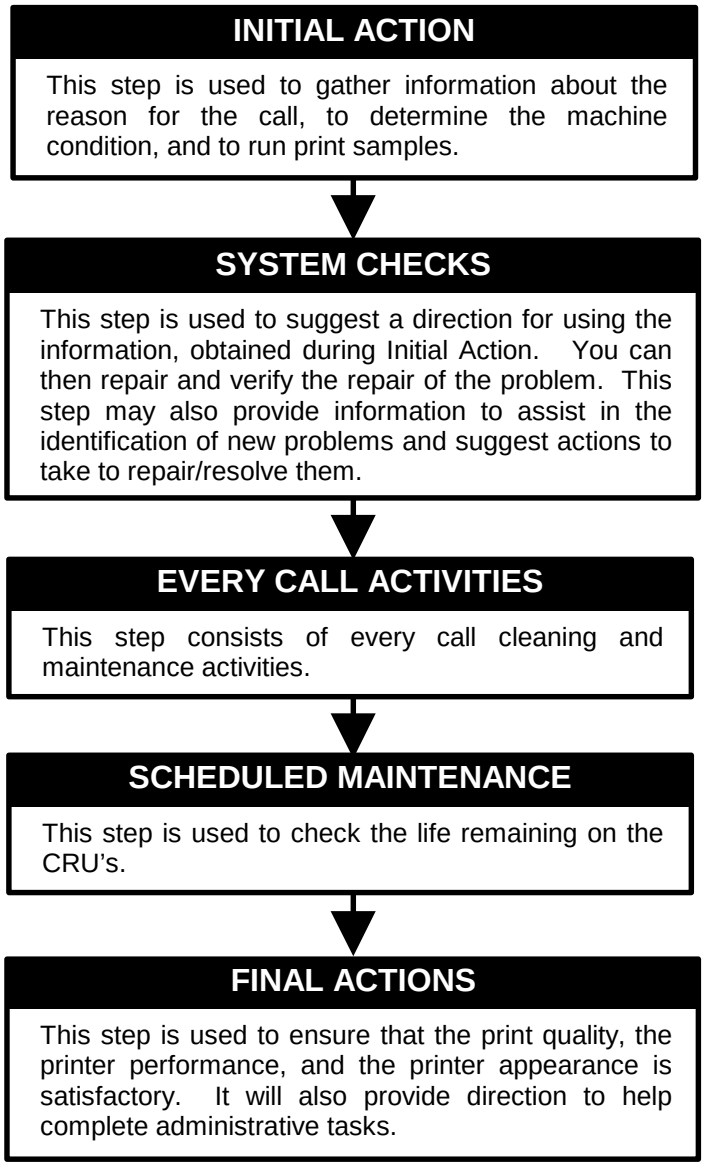
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CALL FLOW


INITIAL ACTION
This step is used to gather information about the reason for the call, to determine the machine condition, and to run print samples.
SYSTEM CHECKS
This step is used to suggest a direction for using the information, obtained during Initial Action. You can then repair and verify the repair of the problem. This step may also provide information to assist in the identification of new problems and suggest actions to take to repair/resolve them.
EVERY CALL ACTIVITIES
This step consists of every call cleaning and maintenance activities.
SCHEDULED MAINTENANCE
This step is used to check the life remaining on the CRU's.
FINAL ACTIONS
This step is used to ensure that the print quality, the printer performance, and the printer appearance is satisfactory. It will also provide direction to help complete administrative tasks.

INITIAL ACTION

Purpose

To suggest how to gather information about the service call, the machine condition, and to direct the user through the call.

PROCEDURE

1. Ask the customer to describe the problem that causes the service call and the job being run when the problem occurred.
2. Inspect any rejected prints for evidence of defects.
3. Switch the printer power Off/On and check for and note/record any fault codes in the Control Panel Display.
4. Examine the Machine Service Log (under the Left Side Cover) for previous problems or activities that may be related to this service call.
5. Go to (SYSTEM CHECKS).

SYSTEM CHECKS

Purpose

To suggest a direction for effective repair and verification of repair of problems found in Initial Action.

PROCEDURE

1. Select the appropriate situation from a-g below, then diagnose and repair the problem.
   a. Replace any obviously broken parts.
   b. If this is an Image Quality problem, go to IQ1 Image Quality Entry RAP in Section 3.
   c. If there is a Fault Code, go to Section 2 Table of Contents. Locate and perform the RAP associated with the Fault Code.
   d. If there is NO fault code associated with the problem, go to Section 2 Table of Contents. Locate and perform the RAP which most closely matches the problem described by the customer.
   e. If the problem is not repeatable, operate the printer in the same job conditions the customer used and recheck for a problem in the categories listed here.
   f. If the problem still is not reproduced, check the printer Fault History.

      (C55/C55mp)
      Off Line, Menu, then scroll to <SERVICE>, <ERROR LOGS>, <FAULT HISTORY>. Scroll through the Fault History and note any repeating faults. Refer to the RAP for these fault codes in Section 2 and read the fault code description to see if the code relates to the customer problem. If so, perform the RAP

      [NC60]
      Menu Up until Print Menu. **Item Up** until Fault History then press **Enter**. Look through the Fault History and note any repeating faults. Refer to the RAP for these fault codes in Section 2 and read the fault code description to see if the code relates to the customer problem. If so, perform the RAP.

   g. If none of the above situations applies go to EVERY CALL ACTIVITIES.
2. Verify that the problem is corrected and go to EVERY CALL ACTIVITIES.

EVERY CALL ACTIVITIES

Purpose

To list service activities required for specific subsystems.

PROCEDURE

1. Open the printer and Clean the Charge Scorotron using the Scorotron cleaner.
2. Clean the toner loading area.
3. Remove the Following:
   a. Print Drum Module. (GP l)
   b. Color Developer Module. (GP 2)
   c. Black Developer Module (GP 3)
   d. Toner Collector. (GP 4)
4. Vacuum the Drum, Developer, and Toner Collector areas.
5. Replace the Toner Collector if required.
6. Reinstall the following:
   a. Black Developer Module (GP 3)
   b. Color Developer Module. (GP 2)
   c. Print Drum Module. (GP l)
   d. Toner Collector. (GP 4)
7. Use Film Remover to clean the Feed Rollers. Do not rotate the Feed Rollers more than 270° while cleaning. Apply Rubber restore if available.
8. Check the Transfer Drum Nip Adjustment (ADJ 11.1)
9. Wipe the outside of the printer.

SCHEDULED MAINTENANCE

Purpose

To check the life remaining on the CRUs.

PROCEDURE

1. Check the life of the Customer Replaceable Units (CRUs).
   a. **(C55/C55mp)**
   Enter the Off Line mode, press **Menu** and scroll to <MAINTENANCE>.

   [NC60]
   Menu Up until Service Menu, **Item Up** until CRU Usage, **Value Up** to see % remaining on the CRUs.

   b. Check the life remaining on the following:
      - Black Developer Cartridge.
      - Color Developer Cartridge.
      - Print Drum.
      - Fuser Module.
2. If any of the CRUs are near end of life, notify the customer.

FINAL ACTION

Purpose

To ensure the image quality is acceptable, printer performance and appearance is satisfactory and to complete administrative tasks.

PROCEDURE

1. Install/close all covers and doors.
2. Run the Print Quality sample set.
   a. **(C55/C55mp)**
      Enter the Off Line mode, press **Menu** and scroll to <SERVICE>. Select <TEST PATTERNS>, and print the PQ set.

      [NC60]
      Menu Up until Service Menu, **Item Down** until Print PQ Set and press **Enter.**
3. If possible, ask the customer to print one of their representative prints to examine and comment on.

Wrap-Up Procedure

1. Record your service activities in the service log.
2. Record the Total meter reading (from the Diagnostic Test Pattern) in the service log.
3. Record the ESS software level (from the Diagnostic Test Pattern) in the service log.
4. **(C55/C55mp)**
   (Off Line, Print, Settings). Record the NIC software level (from the Settings page) in the service log.
5. Put the Printer PQ set and service log into the service log folder.

NOTE: It is very important to save the PQ set. There is information on the Diagnostic sheet (Toner Concentration setpoints) which will be needed if the NVM is reset or the PCU PWB is replaced.

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TROUBLESHOOTING TIPS

The following are some general trouble-shooting tips and hints which will help you locate components and test points.

1. The procedures for entering, exiting and using the C55/C55mp/[NC60] diagnostic programs can be found in Section 6, General Procedures. Refer to the Table of Contents found on page 6-1 for the specific program.
2. Figure 2-1 on the right is also located in Section 6 and shows the location of the input electrical components in the printer. It is especially helpful when using the Switch Scan program. Refer to this figure if you are unsure of input component location. The BSDs in Section 7 may also prove helpful when locating the various electrical components.
3. The Connectors can be located in Section 7. Refer to Section 7 Table of contents on page 7-1. The table below shows the location of the most common connectors:

Connector Numbers	Location	Figure
CN100's	PCU PWB/ESS PWB	7-1
CN200's	Cassette PWB	7-4
CN300's	Connector PWB	7-2
CN400's	Control Panel PWB	7-2
CN700's	LVPS PWB	7-2
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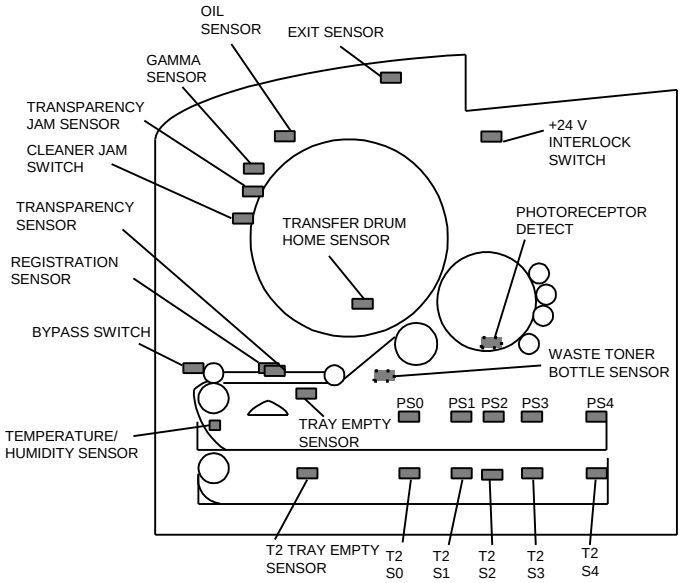


Figure 2-1. Input Component Location

C1 CHECK TRAY 1 RAP

Cassette 1 is not in the printer.

INITIAL ACTION

Load paper and insert Cassette 1 into the printer.

Switch the power off wait 10 seconds and switch the power on. Recheck for the fault.

PROCEDURE

Enter IOT normal diagnostics. Scroll to the SWITCH SCAN program and select Scan Row 01, Press **Form Feed [1]**.

Remove Cassette 1. Manually make and break Paper Size Sensor 0 while observing the Cyan LED. (Sensor 0 is the first one on the left when viewed from the front of the printer.)

The Cyan LED switches on and off.

Y N

Go to BSD 7.2 in Section 7 and trouble-shoot the Paper Size 0 Sensor signal (CN107-8) for a short to ground.

If no short is found, replace the PCU PWB. If the problem still exists, replace the Cassette PWB.

Check for a broken Sensor Flag on the Tray 1 Cassette.

If the problem still exists, replace the PCU PWB. If the problem still exists, replace the Cassette PWB.

C2 CHECK TRAY 2 RAP

Cassette 2 is not in the printer.

INITIAL ACTION

Move the length stop to the 11 inch position (Figure 2-2), load paper, and insert Cassette 2 into the printer.

Switch the power off wait 10 seconds and switch the power on. Recheck for the fault.

PROCEDURE

Enter IOT normal diagnostics. Scroll to the SWITCH SCAN program and select Scan Row 03. Press **Form Feed [1]**.

Remove Cassette 2. Manually make and break T2 Paper Size Sensor 0 while observing the Cyan LED.

The Cyan LED switches on and off.

Y N

Refer to BSD T2, 7.2 in Section 7 and check the following:

- T2 Paper Size 0 Sensor signal CN109-1 for an open.
- +5 VDC CN109-5

If no problem is found, replace the PCU PWB. If the problem still exists, replace the T2 Cassette PWB.

Check for a broken Sensor Flag on the Tray 2 Cassette.

If the problem still exists, replace the PCU PWB. If the problem still exists, replace the Cassette PWB.

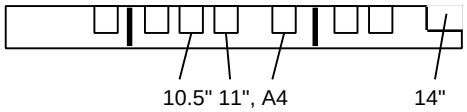


Figure 2-2. Length Stop Location

E1 TRAY 1 JAM RAP

Paper fed from Tray 1 did not reach the Registration Sensor.

INITIAL ACTION

Remove the cassette and check that the paper is loaded correctly and is in good condition.

Switch the power off wait 10 seconds and switch the power on. Recheck for the fault.

PROCEDURE

Check the following:

- Obstructions in the paper path.
- Dirty Feed Rolls.
- Dirty Drive Rollers.
- Mechanical drive problem.

Enter IOT normal diagnostics. Scroll to the SWITCH SCAN program and select Scan Row 00. Press **Form Feed [1]**.

Open the Printer. Actuate and deactuate the Registration Sensor while observing the Magenta LED.

The Magenta LED switches on and off.

Y N

Go to BSD 8.1 in Section 7 and trouble-shoot the Registration Sensor signal, +5 VDC and GND (CN102-9, 7, 8) for an open.

If no open exists, replace the PCU PWB. If the problem still exists, replace the Registration Sensor.

Press **Media Server [2]**. Select Scan Row 01. Press **Form Feed [1]**.

Remove the cassette and actuate and deactuate the Tray Empty Sensor while observing the Black LED.

A

The Black LED switches on and off.

Y N

Go to BSD 7.1 in Section 7 and trouble-shoot the Tray Empty Sensor signal (CN102-6) for a short to ground.

If no short exists, replace the PCU PWB. If the problem still exists, replace the Tray Empty Sensor.

Exit from the SWITCH SCAN program.

Close the Printer.

Remove the paper cassette. Scroll to the MOTOR TEST program. Press **Form Feed [1]** to switch on the motors while observing the Paper Feed Motor.

The Paper Feed Motor is rotating normally.

Y N

Go to BSD 7.3 in Section 7 and trouble-shoot the +24 VDC Interlocked (CN111-5) and Paper Feed Motor for an open. If the motor was noisy, check the clock lines.

If the lines are OK, replace the PCU PWB. If the problem still exists, replace the Paper Feed Motor.

Exit from diagnostics.

Set up the meter to read +24 VDC. Measure between CN101-5 (+) and ground (–).

Make one print while monitoring the meter.

The meter swings from +24 VDC to 0.

Y N

Go to BSD 7.4 in Section 7 and trouble-shoot the Feed Solenoid signal, and +24 VDC Interlocked (CN101-5, 3) for an open.

B C

If no open exists, replace the PCU PWB. If the problem still exists, replace the Paper Feed Solenoid.

Check for a mechanical problem with the feed clutch.

E2 TRAY 2 JAM RAP

Paper fed from Tray 2 did not reach the Registration Sensor.

INITIAL ACTION

Remove the cassette and check that the paper is loaded correctly and is in good condition. Check the position of the rear stop.

Make sure that Tray 1 is pushed all the way in.

Switch the power off wait 10 seconds and switch the power on. Recheck for the fault.

PROCEDURE

Try to run a print from Tray 1.

The print feeds OK from Tray 1.

Y N

Go to **E1** TRAY 1 JAM RAP.

Check the following:

- Obstructions in the paper path.
- Dirty Feed Rolls.
- Dirty Drive Rollers.
- Mechanical drive problem.

Enter IOT normal diagnostics. Scroll to the SWITCH SCAN program and select Scan Row 03. Press **Form Feed [1]**.

Remove cassette 2. Actuate and deactuate the Tray 2 Empty Sensor while observing the Black LED.

The Black LED switches on and off.

Y N

Go to BSD T2 7.1 in Section 7 and troubleshoot the T2 Tray Empty Sensor signal (CN109-4) for a short to ground.

If no short exists, replace the PCU PWB. If the problem still exists, replace the Tray 2 Empty Sensor.

A

Exit from diagnostics.

Set up the meter to read +24 VDC. Measure between CN109-8 (+) and ground (–).

Make one print while monitoring the meter.

The meter swings from +24 VDC to 0 and back to +24.

Y N

Go to BSD T2 7.3 in Section 7 and troubleshoot the T2 Feed Solenoid signal, and +24 VDC Interlocked (CN109-8, 7) for an open.

If no open exists, replace the PCU PWB. If the problem still exists, replace the T2 Feed Solenoid.

Measure between CN109-9 (+) and ground (–).

Make one print while monitoring the meter.

The meter swings from +24 VDC to 0 and back to +24.

Y N

Go to BSD T2 7.4 in Section 7 and troubleshoot the T2 Drive Clutch signal (CN109-9) for an open.

If no open exists, replace the PCU PWB. If the problem still exists, replace the T2 Drive Clutch.

Check for a mechanical problem with the Feed Clutch and Drive Clutch

E3 BYPASS JAM RAP

Paper fed from the Bypass Tray did not reach the Registration Sensor.

INITIAL ACTION

Carefully inspect the bypass opening for paper.

Switch the power off wait 10 seconds and switch the power on. Run another print and recheck for the fault.

PROCEDURE

If paper does not feed from the Bypass but does feed from Tray 1, check for an obstruction in the bypass slot.

Check to ensure that the switch is installed correctly and has not fallen out.

If no paper is loaded in the Bypass when the **E3** occurs, refer to BSD 7.5 in Section 7 and check the Bypass Switch signal (CN312-2) for a short to ground.

If no short exists, replace the PCU PWB. If the problem still exists, replace the Bypass Switch.

E4 INPUT JAM RAP

Paper was on the Registration Sensor too long.

INITIAL ACTION

Open the printer and check for any obstruction in the register roller area.

Switch the power off wait 10 seconds and switch the power on. Run another print to recheck for the fault.

Make sure the Grounding Roller is rotating freely.

Perform the Transfer Drum Nip Adjustment (ADJ 11.1)

PROCEDURE

Enter IOT normal diagnostics. Scroll to the SWITCH SCAN program and select Scan Row 00. Press **Form Feed [1]**.

Open the Printer. Actuate and deactuate the Registration Sensor while observing the Magenta LED.

The Magenta LED switches on and off.

Y N

Go to BSD 8.1 in Section 7 and trouble-shoot the Registration Sensor signal (CN102-9) for a short to ground.

If no short exists, replace the PCU PWB. If the problem still exists, replace the Registration Sensor.

Press **Media Server [2]**. Select Scan Row 04. Press **Form Feed [1]**.

Actuate and deactuate the Transparency Sensor while observing the Cyan LED.

A

The Cyan LED switches on and off.

Y N

Go to BSD 8.4 in Section 7 and trouble-shoot the Transparency Sensor signal (CN311-1) for a short to ground.

If no short exists, replace the PCU PWB. If the problem still exists, replace the Transparency Sensor.

Exit from the SWITCH SCAN program.

Close the Printer.

Remove the paper cassette. Scroll to the MOTOR TEST program and press **Form Feed [1]** to switch on the motors while observing the Paper Feed Motor.

The Paper Feed Motor is rotating normally.

Y N

Go to BSD 7.3 in Section 7 and trouble-shoot the Paper Feed Motor clock lines.

If the lines are OK, replace the PCU PWB. If the problem still exists, replace the Paper Feed Motor.

Exit from diagnostics.

Set up the meter to read +24 VDC. Measure between CN103-4 (+) and ground (–).

Make one print while monitoring the meter.

The meter swings from +24 VDC to 0 and back to +24.

Y N

Go to BSD 9.16 in Section 7 and trouble-shoot the Stripper Solenoid signal and +24 VDC Interlocked (CN103-4, CN303-2,1) for an open.

If no open exists, replace the PCU PWB. If the problem still exists, replace the Stripper Solenoid.

B

Set up the meter to read +24 VDC. Measure between CN101-5 (+) and ground (–).

Make one print while monitoring the meter.

The meter swings from +24 VDC to 0 and back to +24.

Y N

Go to BSD 7.4 in Section 7 and trouble-shoot the Feed Solenoid signal (CN101-5) for a short to ground.

If no short exists, replace the PCU PWB. If the problem still exists, replace the Feed Solenoid.

Set up the meter to read +24 VDC. Measure between CN101-4 (+) and ground (–).

Make one print while monitoring the meter.

The meter swings from +24 VDC to 0 and back to +24.

Y N

Go to BSD 8.2 in Section 7 and trouble-shoot the Registration Clutch signal and +24 VDC Interlocked (CN101-4, 1) for an open.

If no open exists, replace the PCU PWB. If the problem still exists, replace the Registration Clutch.

Check the following:

- Obstructions torn paper etc. in the paper path.
- Mechanical drive problem.

E5 FUSER JAM RAP

Paper did not reach the Exit Sensor.

INITIAL ACTION

Open the Printer and remove the Fuser Assembly. Check for any obstructions in the fuser paper path.

Switch the power off wait 10 seconds and switch the power on. Run another print to recheck for the fault.

PROCEDURE

Check the following:

- Obstructions in the paper path.
- Defective stripper fingers.
- Mechanical drive problem.

Enter IOT normal diagnostics. Scroll to the SWITCH SCAN program and select Scan Row 00. Press **Form Feed [1]**.

Open the Printer, then open the Fuser cover. Actuate and deactuate the Exit Sensor while observing the Yellow LED.

The Yellow LED switches on and off.

Y N

With SCAN ROW 00 still selected, actuate and deactuate the Bypass Switch while observing the Cyan LED.

The Cyan LED switches on and off.

Y N

Go to BSD 10.2 and troubleshoot the Strobe 2 signal CN103-18 for an open.

If no open exists replace the PCU PWB.

A B

A B

Go to BSD 10.2 in Section 7 and troubleshoot the Exit Sensor signal, +5 VDC and GND (CN308-1, 3, 2) for an open.

If no open exists, replace the PCU PWB. If the problem still exists, replace the Exit Sensor.

Exit from the SWITCH SCAN program.

Remove the Front Cover and then close the Printer.

Scroll to the MOTOR TEST program and press **Form Feed [1]** to switch on the motors while observing the Fuser Drive Motor.

The Fuser Drive Motor is rotating normally.

Y N

Go to BSD 10.1 in Section 7 and troubleshoot the Fuser Drive Motor clock lines.

If the lines are OK, replace the PCU PWB. If the problem still exists, replace the Fuser Drive Motor.

- Make sure the Fuser Cover fits correctly.
- Check for a Mechanical problem.

E6 DRUM JAM RAP

Paper is jammed on the Transfer Drum and could be caused by one of the following:

- Transfer Drum Cleaner not cleaning the Transfer Drum or resting on the Transfer Drum during the Print cycle.
- Paper did not reach the Gamma Sensor.
- Paper did not tack to the Transfer Drum and actuated the Transparency Jam Sensor.
- Paper did not tack to the Transfer Drum and actuated the Cleaner Jam Switch.
- Arcing between the Charge Scorotron connectors and the Print Drum.

INITIAL ACTION

Open the Printer and check for torn paper or an obstruction in the paper path. Check for a sheet of paper or a transparency actuating the Transparency Jam Sensor or the Cleaner Jam Switch.

Check the Toner Collector for “layered” toner (sand-art effect). If layered toner is present, refer to OF8 Arcing RAP.

If the problem only occurs when running color prints, check the Stripper Fingers for binding or interference.

Open the Printer and position the Transfer Drum Home Position Sensor flag at the 3 o’clock position. The Lead edge of the white patch should be at the tips of the stripper fingers. If not, replace the Transfer Drum.

PROCEDURE

Switch the Printer off. Remove the front cover and tape the Control Panel up so that you can view the operation of the Transfer Drum Cleaning Solenoid.

Switch the Printer on. Observe the Transfer Drum Cleaning Solenoid and the Cleaner Assembly.

If you see solid development during the copy quality setup, go the OF8 Arcing RAP.

The Transfer Drum Cleaning Solenoid should energize and move the Cleaner Assembly against the Transfer Drum while the patches are generated during the Copy Quality Setup.

When the Copy Quality Setup is complete the Transfer Drum Cleaning Solenoid should deenergize and move the Cleaner Assembly away from the Transfer Drum.

If the **E6** jam occurs before paper is fed and the patches are not being cleaned the Transfer Drum Cleaner assembly is not camming into the cleaning position.

If the machine prints OK when printing black only but jams (**E6**) when printing color, it is an indication that the Transfer Drum Cleaner assembly is staying cammed against the Transfer Drum.

The Transfer Drum Cleaning Solenoid and Transfer Drum Cleaner Assembly are operating correctly.

Y N

Check that when the solenoid energizes the camshaft turns 180 degrees and is stopped by the outer tab on the cleaner clutch sleeve. Ensure that the solenoid is tight and the actuator catches the inner tab when de-energized, and stops the outer tab when energized. Check for flashing on the plastic assembly, a bent solenoid actuator or other things that could interfere with proper operation. Clean the cams and the cam followers with film remover to minimize friction. Do not attempt to lubricate these cams. Observe the operation several times and look for smooth, consistent operation. Do not attempt to disassemble and adjust the clutch. If the clutch is defective order the new Cleaner Clutch Shaft Assembly.

A B

A B

Set up the meter to read +24 VDC. Measure between CN103-3 (+) and ground (–).

Switch the power off wait 10 seconds and switch the power on while monitoring the meter.

The meter swings from +24 VDC to 0 and back to +24.

Y N

Go to BSD 9.14 in Section 7 and troubleshoot the Transfer Drum Cleaning Solenoid signal and +24 VDC Interlocked (CN103-3, CN316-2, 1) for an open or a short.

If 24 VDC is not available at 316-1 on the Connector PWB, go to BSD 1 and troubleshoot the 24 VDC Interlocked (CN114-1, CN103-1).

Check the Transfer Drum Cleaning Solenoid and the cleaner assembly for binding.

If the sheet appears to be stopping at the Transfer Drum to Print Drum Nip, check the Transfer Drum Nip Adjustment (ADJ 11.1).

Enter IOT normal diagnostics. Scroll to the SWITCH SCAN program and select Scan Row 05. Press **Form Feed [1]**.

Open the Printer. Actuate and deactuate the Transparency Jam Sensor while observing the Black LED.

The Black LED switches on and off.

Y N

Check for an obstruction that is keeping the Transparency Jam Sensor actuator raised.

C D

C D

If OK, refer to BSD 9.17 and check the Transparency Jam Sensor signal CN314-2 for a short to ground.

If no short exists, replace the PCU PWB. If the problem still exists, replace the Transparency Jam Sensor.

Open the printer and remove the Transfer Discharge Corotron from the left side of the printer. You will need to squeeze the corotron handle to release the corotron.

With Scan Row 05 still selected, actuate and deactuate the Cleaner Jam Switch while observing the Magenta LED.

The Magenta LED switches on and off.

Y N

Check for an obstruction that is keeping the Cleaner Jam Switch actuated.

If OK, refer to BSD 9.18 and check the Cleaner Jam Switch signal CN318-2 for a short to ground.

If no short exists, replace the PCU PWB. If the problem still exists, replace the Cleaner Jam Switch.

Exit from the Switch Scan Program.

Scroll to the MOTOR TEST program and switch on the motors while observing the Fuser Drive Motor

The Fuser Drive Motor is rotating normally.

Y N

Go to BSD 10.1 in Section 7 and troubleshoot the Fuser Drive Motor for an open. If the motor was noisy, check the clock lines for an open or short

If the lines are OK, replace the PCU PWB. If the problem still exists, replace the Fuser Drive Motor.

E

E

Set up the meter to read +24 VDC. Measure between CN103-4 (+) and ground (–).

Make one print while monitoring the meter.

The meter swings from +24 VDC to 0 and back to +24.

Y N

Go to BSD 9.16 in Section 7 and troubleshoot the Stripper Solenoid signal and +24 VDC Interlocked (CN103-4, CN303-2, 1) for an open or a short.

If no short or open can be found, replace the PCU PWB. If the problem still exists, replace the Stripper Solenoid.

Set up the meter to read +5 VDC. Measure between CN103-11 (+) and ground (–).

Switch the power off wait 10 seconds and switch the power on.

The meter swings from 3.8 VDC to .5 when the white patch passes in front of the Gamma Sensor.

Y N

Go to BSD 8.5 in Section 7 and troubleshoot the Gamma Sensor, all lines, for an open.

If the lines are OK, replace the PCU PWB. If the problem still exists, replace the Gamma Sensor.

Refer to Section 6, GP 9.3 and perform the Transfer Voltage Check.

The Transfer voltage is within specification.

F

F

Y N

Go to BSD 9.1 in Section 7 and troubleshoot the following for an open or short.

- Black Transfer Lead from the Power Supply.
- Transfer On Signal (CN106-3).
- Transfer Control Signal (CN106-5).
- Bias Control Signal (CN106-6).
- +24 VDC to Power Supply (CN106-1).

If no wiring problem can be found, replace the PCU PWB. If the problem still exists, replace the High voltage Power Supply.

Refer to BSD 9.1 in Section 7 and check the Charge On Signal (CN106-2) for an open.

Check the following:

- Obstructions in the paper path.
- Dirty Feed Rolls.
- Mechanical drive problem.

E7 PRINT DRUM JAM RAP

INITIAL ACTION

Open the Printer and clear the jam.

If problem reoccurs refer to E4 RAP.

E8 OUTPUT JAM RAP

Paper was on the Exit Sensor too long.

INITIAL ACTION

We have seen some machines where the actuator for the Exit Sensor has become stuck during shipping. When this happens, the sensor does not change state, and the **E8** jam occurs. If you remove the sensor cover (PL 2.1) by removing the two screws that secure it, you can ensure that the actuator is free and that the sensor is secured in the proper position in the sensor cover.

Open the Printer and remove the Fuser Assembly. Check for any obstructions in the fuser paper path.

Switch the power off wait 10 seconds and switch the power on. Run another print to recheck for the fault.

PROCEDURE

Enter IOT normal diagnostics. Scroll to the SWITCH SCAN program and select Scan Row 00. Press **Form Feed [1]**.

Open the Printer, then open the Fuser Cover. Actuate and deactuate the Exit Sensor while observing the Yellow LED.

The Yellow LED switches on and off.

Y N

Go to BSD 10.2 in Section 7 and trouble-shoot the Exit Sensor signal (CN308-1) for a short to ground.

If no short exists, replace the PCU PWB. If the problem still exists, replace the Exit Sensor.

Check the following:

- Obstructions in the paper path.
- Mechanical drive problem in the feedout area.

E9 CLOSE PRINTER RAP

The Printer is open.

INITIAL ACTION

Open and reclose the printer.

PROCEDURE

Enter IOT normal diagnostics. Scroll to the SWITCH SCAN program and select Scan Row 00. Press **Form Feed [1]**.

Open and close the Printer while observing the Black LED.

The Black LED switches on and off.

Y N

Go to BSD 1 (G1) in Section 7 and troubleshoot the 24 VDC Interlock Switch.

If no open exists, replace the PCU PWB. If the problem still exists, replace the 24 VDC Interlock Switch.

Replace the PCU PWB.

EA COLOR DEV. MISINSTALLED RAP

The Color Developer Module was installed incorrectly or overtoning has occurred.

INITIAL ACTION

Enter IOT normal diagnostics. Scroll to the TEST PRINT program and press **Form Feed [1]** to run a test print. While the print is running, observe the KT=__, CT=__, MT=__, YT=__ values.

If any of the three color (C, M, Y) toner concentration values are below 10, that color is overtoned. Refer to ADJ 9.1 **EA** "Tone Down" Procedure in Section 4.

If the values are NOT too low, continue with this RAP.

Remove the Color Developer Module.

Check the Developer Module connector to be sure it is clean.

Reinstall the Color Developer Module.

If the problem persists, check connector CN118 for a good connection or any loose wiring before replacing the Color Developer Module.

If the problem still exists, replace the PCU PWB.

EB BLACK DEV. MISINSTALLED RAP

The Black Developer Module was installed incorrectly or the contacts are dirty.

INITIAL ACTION

Remove the Black Developer Module.

Check for binding in the housing.

Check to be sure that the seal has been removed.

Check the Developer Module connector to be sure it is clean.

Reinstall the Black Developer Module.

If the problem persists, check connector CN107 for a good connection or any loose wiring before replacing the Black Developer Module.

If the problem still exists, replace the PCU PWB.

EC PRINT DRUM MISINSTALLED RAP

The Print Drum Module was installed incorrectly or is not making a good connection.

INITIAL ACTION

Remove then reinstall the Print Drum Module.

This problem is usually caused by a poor connection on the left side of the Print Drum Module. Three contacts are cammed out when the Print Drum Module is installed. These contacts make a connection with the Drum Link PWB located on the left side of the Print Drum Module. Check to make sure there is a good connection and the contacts cam out.

Refer to BSD 9.2 in Section 7 and check the Drum Detect (H) signal.

If the problem persists, replace the Print Drum Module.

If the problem still exists, replace the PCU PWB.

F1 DISK ERROR (FLOPPY) RAP

The Floppy Disk cannot be read.

INITIAL ACTION

Note: The Floppy Disk must be a DOS format.

Load a different floppy and try to read it.

If the floppy still cannot be read, check the following for a good connection:

- CN102 between the Floppy drive and the ESS. (BSD 13 in Section 7).
- CN103 the flat cable between the Floppy drive and the ESS. (BSD 13 in Section 7).

If the problem still exists, replace the Floppy Drive before replacing the ESS PWB.

F2 DISK I/O ERROR (FLOPPY) RAP

The Floppy Disk cannot be read.

INITIAL ACTION

Note: The Floppy Disk must be a DOS format.

Load a different floppy and try to read it.

If the floppy still cannot be read, check the following for a good connection:

- CN102 between the Floppy drive and the ESS. (BSD 13 in Section 7).
- CN103 the flat cable between the Floppy drive and the ESS. (BSD 13 in Section 7).

If the problem still exists, replace the Floppy Drive before replacing the ESS PWB.

F3 ACTION FAILED (FLOPPY) RAP

The Floppy Disk cannot be accessed.

INITIAL ACTION

Note: The Floppy Disk must be a DOS format.

Load a different floppy and try to read it.

If the floppy still cannot be read, check the following for a good connection:

- CN102 between the Floppy drive and the ESS. (BSD 13 in Section 7).
- CN103 the flat cable between the Floppy drive and the ESS. (BSD 13 in Section 7).

If the problem still exists, replace the Floppy Drive before replacing the ESS PWB.

H1 HARD DISK ERROR RAP

The Hard Disk cannot be read.

C55/C55mp

*NOTE: If no hard disk is installed on this printer, print a Settings page (**Off Line**, Print, Settings) to record the customer network settings. Tell the customer that you are going to do a factory reset and they will need to reinstall the printer on their network. Perform a Factory Reset (**Off Line**, Setup, Factory Reset).*

[NC60]

*NOTE: If no hard disk is installed on this printer, print a Config. sheet (**Menu Up** to Service Menu, **Item Up** to Config Sheet, **Enter**) to record the customer network settings. Tell the customer that you are going to do a factory reset and they will need to reinstall the printer on their network. Perform a Factory Reset. Power Off. Press and hold **On Line** and **Enter**. Switch the power on. Continue holding the **On Line** and **Enter** keys until the display indicates Power On Version X.XX, then release the keys. This will enable the Reset Menu. **Menu Up** until Reset Menu, **Item Up** until Factor Defaults, **Value Up** until Yes, then press **Enter**.*

INITIAL ACTION

Switch the power off wait 10 seconds and switch the power on. This will force the ESS to retry reading the Hard Disk.

If the Hard Disk still cannot be read, check the following:

- **(C55/C55mp)**
  Check the Hard Disk to ensure that the new Relay Interface PWB is installed. Look for a small PWB mounted to the left of the hard drive.
- All Printers, check for a good connection between the Hard Disk and the ESS (CN101). (BSD 13 in Section 7).

If the problem still exists, replace the Hard Disk before replacing the ESS PWB.

H2 HARD DISK CONTROLLER ERROR RAP

The Hard Disk Controller has failed.

INITIAL ACTION

Switch the power off wait 10 seconds and switch the power on. Retry reading the Hard Disk.

If the Hard Disk still cannot be read, check the following for a good connection :

- Between the Hard Disk and the ESS (CN101). (BSD 13 in Section 7).

If the problem still exists, replace the ESS PWB.

H3 HARD DISK FULL RAP

The Hard Disk is full.

INITIAL ACTION

Switch the power off wait 10 seconds and switch the power on. This will force the ESS to retry reading the Hard Disk.

If the Hard Disk still does not write, have the customer remove some of the files from the Hard Disk.

H4 REFORMAT HARD DISK RAP

The Hard Disk needs to be formatted.

INITIAL ACTION

Switch the power off wait 10 seconds and switch the power on to retry reading the Hard Disk.

If the **H4** occurs again, reformat the hard disk:

J1 ADD YELLOW TONER RAP

The yellow toner concentration sensor has detected low yellow toner in the yellow developer assembly. When this occurs, the Printer will display “Adjusting Print Quality” and attempt to tone up.

NOTE: If a new color developer housing has been installed, make sure the 3 seals have been removed from the left side of the housing.

INITIAL ACTION

Check with the customer to see if they have already added Yellow Dry Ink. Add Yellow Dry Ink, if required.

Adding too much toner can cause the toner to “cake” and not be dispensed.

(C55/C55mp)
Put the printer in the Off Line mode.

Select the SERVICE Menu and print a Diagnostic Test Sheet.

Determine the Engine Software version from the Diagnostic Test Sheet. If the Software level is Version 66, replace the PCU PWB.

All Printers, switch the power off wait 10 seconds and switch the power on. Allow the Printer to try to tone up to recheck for the fault.

PROCEDURE

Enter IOT normal diagnostics. Scroll to the MOTOR TEST program and Press **Form Feed [1]** to switch on the motors while observing the Color Toner Motor.

The Color Toner Motor is rotating normally.

A

A

Y N

Refer to BSD 9.11 in Section 7 and troubleshoot the Color Toner Motor lines (CN116-1, 2) for an open or a short to ground.

If no wiring problem exists, replace the PCU PWB. If the problem still exists, replace the Color Toner Motor.

Exit from diagnostics .

Set up the meter to read +24 VDC. Measure between CN115-16 (+) and ground (–).

Switch the power off wait 10 seconds and switch the power on while monitoring the meter.

The meter swings from +24 VDC to 0.

Y N

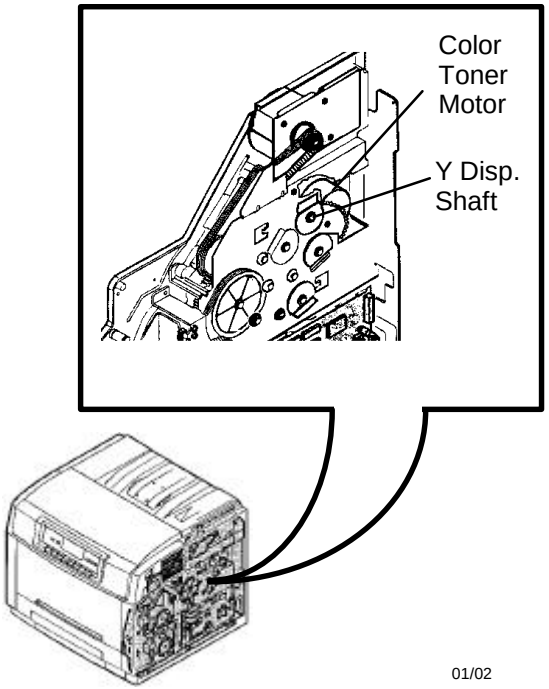
Go to BSD 9.10 in Section 7 and trouble-shoot the Yellow Toner Solenoid signal and +24 VDC Interlocked (CN115-16, 15) for an open.

If no open exists, replace the PCU PWB. If the problem still exists, replace the Yellow Toner Solenoid.

Check the Yellow Dispense Shaft to see if it rotates when the Solenoid energizes. If not, look for a mechanical problem (gears etc.).

Check the ground to the Yellow Toner Concentration Sensor (CN118-4 to CN1009-7) BSD 9.10.

If the ground is OK, replace the PCU PWB.



J2 ADD MAGENTA TONER RAP

The magenta toner concentration sensor has detected low magenta toner in the magenta developer assembly. When this occurs, the Printer will display “Adjusting Print Quality” and attempt to tone up.

NOTE: If a new color developer housing has been installed, make sure the 3 seals have been removed from the left side of the housing.

INITIAL ACTION

Check with the customer to see if they have already added Magenta Dry Ink. Add Magenta Dry Ink, if required.

Adding too much toner can cause the toner to “cake” and not be dispensed.

(C55/C55mp)
Put the printer in the Off Line mode.

Select the SERVICE Menu and print a Diagnostic Test Sheet.

Determine the Engine Software version from the Diagnostic Test Sheet. If the Software level is Version 66, replace the PCU PWB.

All Printers, switch the power off wait 10 seconds and switch the power on. Allow the Printer to try to tone up to recheck for the fault.

PROCEDURE

Enter IOT normal diagnostics. Scroll to the MOTOR TEST program and Press **Form Feed [1]** to switch on the motors while observing the Color Toner Motor.

The Color Toner Motor is rotating normally.

A

A

Y N

Refer to BSD 9.11 in Section 7 and troubleshoot the Color Toner Motor lines (CN116-1, 2) for an open or a short to ground.

If no wiring problem exists, replace the PCU PWB. If the problem still exists, replace the Color Toner Motor.

Exit from diagnostics.

Set up the meter to read +24 VDC. Measure between CN115-14 (+) and ground (–).

Switch the power off wait 10 seconds and switch the power on while monitoring the meter.

The meter swings from +24 VDC to 0.

Y N

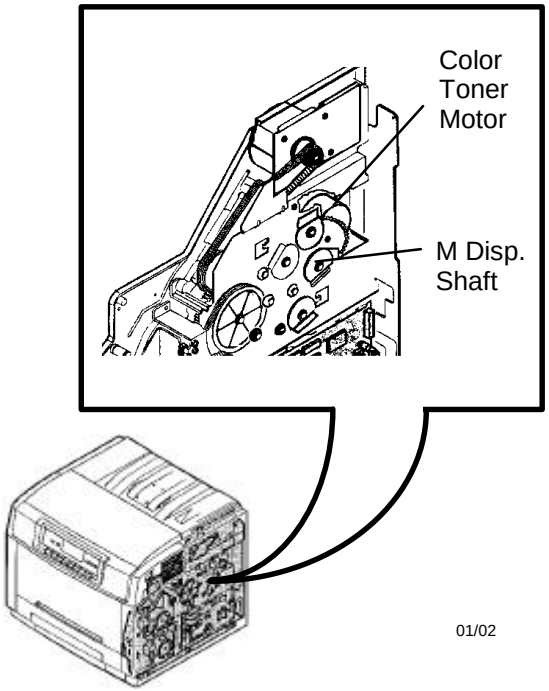
Go to BSD 9.10 in Section 7 and trouble-shoot the Magenta Toner Solenoid signal and +24 VDC Interlocked (CN115-14, 13) for an open.

If no open exists, replace the PCU PWB. If the problem still exists, replace the Magenta Toner Solenoid.

Check the Magenta Dispense Shaft to see if it rotates when the Solenoid energizes. If not, look for a mechanical problem (gears etc.).

Check the ground to the Magenta Toner Concentration Sensor (CN118-5 to CN1009-21) BSD 9.10.

If the ground is OK, replace the PCU PWB.



J3 ADD CYAN TONER RAP

The cyan toner concentration sensor has detected low cyan toner in the cyan developer assembly. When this occurs, the Printer will display “Adjusting Print Quality” and attempt to tone up.

NOTE: If a new color developer housing has been installed, make sure the 3 seals have been removed from the left side of the housing.

INITIAL ACTION

Check with the customer to see if they have already added Cyan Dry Ink. Add Cyan Dry Ink, if required.

Adding too much toner can cause the toner to “cake” and not be dispensed.

(C55/C55mp)
Put the printer in the Off Line mode.

Select the SERVICE Menu and print a Diagnostic Test Sheet.

Determine the Engine Software version from the Diagnostic Test Sheet. If the Software level is Version 66, replace the PCU PWB.

All Printers, switch the power off wait 10 seconds and switch the power on. Allow the Printer to try to tone up to recheck for the fault.

PROCEDURE

Enter IOT normal diagnostics. Scroll to the MOTOR TEST program and Press **Form Feed [1]** to switch on the motors while observing the Color Toner Motor.

The Color Toner Motor is rotating normally.

A

A

Y N

Refer to BSD 9.11 in Section 7 and troubleshoot the Color Toner Motor lines (CN116-1, 2) for an open or a short to ground.

If no wiring problem exists, replace the PCU PWB. If the problem still exists, replace the Color Toner Motor.

Exit from diagnostics.

Set up the meter to read +24 VDC. Measure between CN115-12 (+) and ground (–).

Switch the power off wait 10 seconds and switch the power on while monitoring the meter.

The meter swings from +24 VDC to 0.

Y N

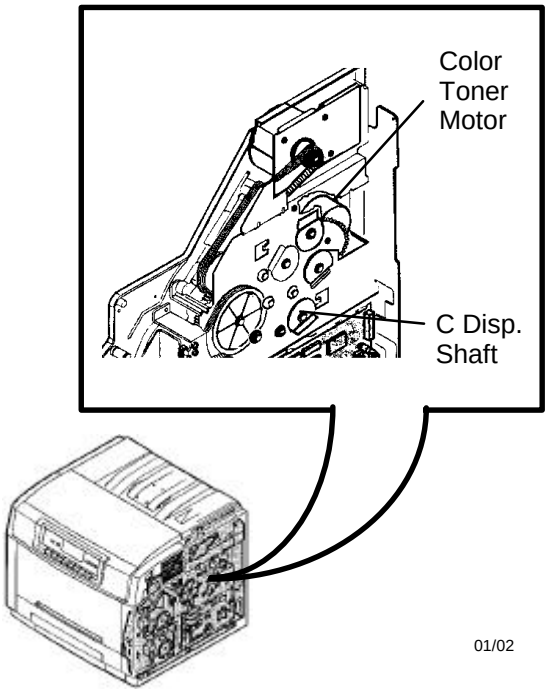
Go to BSD 9.10 in Section 7 and trouble-shoot the Cyan Toner Solenoid signal and +24 VDC Interlocked (CN115-12, 11) for an open.

If no open exists, replace the PCU PWB. If the problem still exists, replace the Cyan Toner Solenoid.

Check the Cyan Dispense Shaft to see if it rotates when the Solenoid energizes. If not, look for a mechanical problem (gears etc.).

Check the ground to the Cyan Toner Concentration Sensor (CN118-6 to CN1009-17) BSD 9.10.

If the ground is OK, replace the PCU PWB.



01/02

J4 ADD BLACK TONER RAP

The black toner concentration sensor has detected low black toner in the black developer assembly. When this occurs, the Printer will dead cycle and attempt to tone up.

NOTE: If a new black developer housing has been installed, make sure the packing material has been removed.

INITIAL ACTION

Check with the customer to see if they have already added Black Dry Ink. Add Black Dry Ink, if required.

Adding too much toner can cause the toner to "cake" and not be dispensed.

Check the Black toner hopper to ensure that it is latched closed and is opening the shutter to the developer housing.

(C55/C55mp)
Put the printer in the Off Line mode.

Select the SERVICE Menu and print a Diagnostic Test Sheet.

Determine the Engine Software version from the Diagnostic Test Sheet. If the Software level is Version 66, replace the PCU PWB.

All Printers, switch the power off wait 10 seconds and switch the power on. Recheck for the fault.

PROCEDURE

Remove the Printer Rear Cover. There is a hole located at the left rear of the printer. This hole is used to view the gears for the Toner motor.

NOTE: In the following steps, we will be operating the Black Toner Motor. Do not allow the motor to run for over 2 seconds or overtoning can result.

A

Enter IOT normal diagnostics. Scroll to the MOTOR TEST program and press **Form Feed [1]** to switch on the motors. Look through the hole and switch on the Black Toner Motor by pressing **On Line [0]**. Release **On Line [0]** to stop the motor. Press **Media Server [2]** to stop the test.

The Motor Runs.

Y N

Set up the meter to read +24 VDC. Measure between CN107-13 (+) and ground (–). Press **Form Feed [1]** to switch on the motors. Press **On Line [0]** to switch on the Black Toner Motor. Release **On Line [0]** to stop the motor. Press **Media Server [2]** to stop the test.

The meter reads approximately 12 VDC when **On Line [0]** was pressed.

Y N

Go to BSD 9.8 in Section 7 and troubleshoot the Black Toner Motor lines (CN107-13, 14) for an open.

If the lines are OK, replace the Black Toner Motor

Check the Black toner box for auger binding.

Check the ground to the Black Toner Concentration Sensor (CN107-2 to CN1001-4) BSD 9.7.

If the ground is OK, replace the PCU PWB.

Toner should be dispensed, check the Black toner box for auger binding.

Check the ground to the Black Toner Concentration Sensor (CN107-2 to CN1001-4) BSD 9.7.

If the ground is OK, replace the PCU PWB.

J5 REPLACE COLOR DEVELOPER CARTRIDGE RAP

NOTE: This code is normally preceded by a W1 code.

The Color Developer Cartridge is at end of life.

INITIAL ACTION

Check the Color Developer Cartridge life.

(C55/C55mp)
Press **On Line**, then press **Menu**, use **Next** to scroll to the MAINTENANCE menu, press **Enter**. Use **Next** to scroll to COLOR DEV CART, press **Enter**.

[NC60]
Press **Menu Up** until Service, **Item Down** until CRU Usage. Press **Value Up** to scroll to the Color Dev. Cart.

Check the % remaining on the Color Developer Cartridge. If the cartridge is at end of life, notify the customer and have them install a new Color Developer Cartridge.

PROCEDURE

Check the developer drive motor, belts and gears to ensure that they are rotating.

If the **J5** code does not clear when a new Color Developer Cartridge is install, go to BSD 9.10 and check the New Developer Sense signal (CN118-7) for an open or short to ground.

If the **J5** code exists even though the Color Cartridge has not reached end of life refer to BSD 9.10 and check the following:

- Cyan Toner Sense signal for an open or a short to ground (CN118-10).
- Cyan Toner +5 VDC for an open (CN118-3).
- Magenta Toner Sense signal for an open or a short to ground (CN118-9).
- Magenta Toner +5 VDC for an open (CN118-2).

A

- Yellow Toner Sense signal for an open or a short to ground (CN118-8).
- Yellow Toner +5 VDC for an open (CN118-1).

If all of the above check OK, replace the Color Developer Cartridge. If the problem still exists, replace the PCU PWB.

J6 REPLACE BLACK DEVELOPER CARTRIDGE RAP

NOTE: This code is normally preceded by a W2 code.

The Black Developer Cartridge is at end of life.

INITIAL ACTION

Check the Black Developer Cartridge life.

(C55/C55mp)
Press **On Line**, then press **Menu**, use **Next** to scroll to the MAINTENANCE menu, press **Enter**. Use **Next** to scroll to BLACK DEV CART, press **Enter**.

[NC60]
Press **Menu Up** until Service, **Item Down** until CRU Usage. Press **Value Up** to scroll to the Black Dev. Cart.

Check the % remaining on the Black Developer Cartridge. If the cartridge is at end of life, notify the customer and have them install a new Black Developer Cartridge.

PROCEDURE

If the **J6** code does not clear when a new Black Developer Cartridge is install, go to BSD 9.7 and check the New Developer Sense signal (CN107-3) for an open or short.

If the **J6** code exists even though the Black Cartridge has not reached end of life refer to BSD 9.7 and check the following:

- Black Toner Sense signal for an open or a short to ground (CN107-4).
- Black Toner +5 VDC for an open (CN107-1).

If all of the above check OK, replace the Black Developer Cartridge. If the problem still exists, replace the PCU PWB.

J7 TONER COLLECTOR FULL RAP

The Toner Collector is full or not installed correctly.

INITIAL ACTION

Remove the Toner Collector and ensure that it is not full.

Check to ensure that the channel that the sensor “looks” through is not blocked with toner.

Reinstall the Toner Collector.

PROCEDURE

Enter IOT normal diagnostics. Scroll to the SWITCH SCAN program and select Scan Row 02. Press **Form Feed [1]**.

Open the Printer. Remove and reinstall the Toner Collector while observing the Yellow LED.

The Yellow LED switches on and off

Y N

Go to BSD 9.21 in Section 7 and trouble-shoot the Waste Toner Sensor signal, +5 VDC, and GND (CN102-3, 1, 2) for an open.

If no open exists, replace the PCU PWB. If the problem still, exists replace the Waste Toner Sensor.

Install a new Toner Collector.

J8 REPLACE PRINT DRUM RAP

The Print Drum is at end of life, is not in place, or is not installed correctly.

NOTE: This code is normally preceded by a W3 code.

INITIAL ACTION

Check the Print Drum Cartridge life.

(C55/C55mp)
Press **On Line**, then press **Menu**, use **Next** to scroll to the MAINTENANCE menu, press **Enter**. Use **Next** to scroll to PRINT DRUM, press **Enter**.

[NC60]
Press **Menu Up** until Service, **Item Down** until CRU Usage. Press **Value Up** to scroll to the Print Drum.

Check the % remaining on the Print Drum Cartridge. If the cartridge is at end of life, notify the customer and have them install a new Print Drum Cartridge.

PROCEDURE

If the **J8** code does not clear when a new Print Drum Cartridge is installed, go to BSD 9.2 and check the New Drum Detect signal (CN107-15) for an open or short to ground. Also check +5 VDC (CN107-17) for an open.

If the **J8** code exists even though the Print Drum Cartridge has not reached end of life, refer to BSD 9.2 and check the Drum Detect signal (CN107-19).

If all of the above check OK, replace the Print Drum Cartridge. If the problem still exists, replace the PCU PWB.

J9 REPLACE FUSER MODULE RAP

The Fuser is at end of life.

NOTE: This code is normally preceded by a W4 code.

INITIAL ACTION

Check the Fuser Cartridge life.

(C55/C55mp)
Press **On Line**, then press **Menu**, use **Next** to scroll to the MAINTENANCE menu, press **Enter**. Use **Next** to scroll to FUSER MODULE, press **Enter**.

[NC60]
Press **Menu Up** until Service, **Item Down** until CRU Usage. Press **Value Up** to scroll to the Fuser Module.

Check the % remaining on the Fuser Module. If the module is at end of life, notify the customer and install a new Fuser Module.

PROCEDURE

If the **J9** code does not clear when a new Fuser Module is install, go to BSD 10.5 and check the New Fuser Detect signal (CN103-8, CN306-4) for an open or short to ground. Also check +5 VDC (CN306-1) for an open.

If all of the above check OK, replace the Fuser Module. If the problem still exists, replace the PCU PWB.

JA REPLACE OIL/PAD RAP

The Oil/Pad needs to be replaced.

INITIAL ACTION

Check the Oil Bottle and sump. If required, replace the Wiper Roll and Oil Bottle. If this code persists after a new Oil Bottle is installed or the Oil is OK, continue with this RAP.

Paper dust and other contaminants can cause the fuser oil to get cloudy and solidify causing the ball that triggers the Low Oil Sensor to stick. When low oil is detected, the printer will stop and the fuser will be powered off after 50 prints to prevent Fuser damage. If the fuser has the contamination described above, the ball could be stuck in a position that will prevent the fuser from warming up.

Check to ensure the fuser sump has oil in it. There have been some reported instances of defective oil bottles failing to dispense oil into the sump.

Ensure that the valve stem on the oil bottle is not bent or off center. A bent stem will not engage the plunger in the sump correctly.

If the sump is full, check to see if the ball is stuck in the bottom of the channel. If it is, you may be able to correct the problem by removing the rubber stopper in the tank above the ball and using a scribe or screwdriver to loosen the ball.

NOTE: This is only a temporary fix. You should have the customer order a new fuser assembly. If in your judgment this is a premature failure, follow the applicable warranty replacement procedures.

If the problem still exists continue with this RAP.

PROCEDURE

Enter IOT normal diagnostics. Scroll to the SWITCH SCAN program and select Scan Row 05. Press **Form Feed [1]**.

Open the Printer and remove the Fuser Assembly.

Actuate and deactuate the Oil Sensor while observing the Cyan LED.

The Cyan, LED switches off and on.

Y N

With Scan Row 05 still selected, actuate and deactuate the Cleaner Jam Switch while observing the Magenta LED.

The Magenta, LED switches off and on.

Y N

Refer to BSD 10.4 and check the Strobe 1 signal CN103-19 for an open.

If no open exists replace the PCU PWB.

Refer to BSD 10.4 and check the Oil Low signal, +5 VDC and GND CN309-2, 1, 3 for an open.

If no open exists, replace the PCU PWB. If the problem still exists, replace the Oil Sensor.

Check the ball that actuates the Oil Sensor to ensure that it is moving freely. Reinstall the Fuser Assembly and close the printer to see if the fault clears.

If the problem still exists replace the Wiper Roll and Oil Bottle. If the problem still exists, replace the PCU PWB.

T0 THERMISTOR ERROR RAP

The Fuser Thermistor readings are out of range, the Fuser is missing, or the Fuser is not seated correctly.

INITIAL ACTION

NOTE: During the following check be careful not to tip the Fuser.

Remove the Fuser Module and check the condition of the Fuser Connectors.

Check the operation of the shutter that covers the fuser connectors.

Reinstall the Fuser Module.

Switch the power off wait 10 seconds and switch the power on. Recheck for the fault.

PROCEDURE

Set up the meter to read +5 VDC. Measure between CN103-9 (+) and ground (–).

When the fuser is cold, the reading should be around 0.1 VDC. When the fuse is hot, the reading should be approximately 3.5 VDC.

The readings are OK.

Y N

Go to BSD 10.5 in Section 7 and trouble-shoot the Fuser Thermistor signal and +5 VDC for an open or a short to ground (CN103-9, CN306-3, 2).

If the wiring is OK, replace the Fuser Assembly. If the problem still exists, replace the PCU PWB.

Replace the PCU PWB.

T1 UNDER TEMPERATURE RAP

NOTE: This RAP applies to both 115 and 220 volt printers. The 220 volt readings will be in parenthesis.

After the proper warm up time has elapsed, the fuser temperature is less than 85°C.

INITIAL ACTION

Remove the Fuser Module and check the condition of the Fuser Connectors. Also check to ensure that the ball which actuates the Low Oil Sensor is moving freely. The ball could be stuck in the down position which will prevent the fuser from warming up. If the ball is not free, you may be able to correct the problem by removing the rubber stopper in the tank above the ball and using a scribe or screwdriver to loosen the ball.

NOTE: This is only a temporary fix. You should have the customer order a new fuser assembly. If in your judgment this is a premature failure, follow the applicable warranty replacement procedures.

Switch the power off wait 10 seconds and switch the power on. Recheck for the fault.

PROCEDURE

Switch the power off.

Locate connector CN1004/CN1008. This is a two-wire (black and white wires, heavy gauge) connector that provides AC power to the fuser. The connector is located just to the left of the PCU board (as you are looking at it).

Disconnect CN1004/CN1008.

Set up the meter to read Ohms. Connect the meter between pins 1 & 2 of CN1008 the Fuser side, (left connector) and measure the resistance.

The resistance is less than 10 Ohms.

Y N

A B

A B

Go to BSD 10.5 in Section 7 and troubleshoot the Fuser connectors (CN1008, 1009) for an open circuit. If the wiring is OK, replace the Fuser Module.

CAUTION

Be careful during the following test, High Voltage AC may be present.

Set up the meter to measure 120 (220) VAC. Connect between CN1004-2 and CN1004-1, the LVPS side, (right connector).

Switch the Power on.

The reading is approximately 115 (220) VAC.

Y N

Switch the printer off. Reconnect CN1004/CN1008.

Set up the meter to read +24 VDC. Measure between CN107-20 (+) and ground (–).

Switch the printer on.

Open and close the Printer while observing the meter.

The meter reads 24 VDC with the Printer open and 0 VDC with the Printer closed.

Y N

Go to BSD 10.5 and troubleshoot the AC on (L) signal and +24 VDC Interlocked (CN107-20, 16) for an open.

If the wiring is OK, replace the PCU PWB. If the problem still exists, replace the Low Voltage Power Supply.

C D

C D

Measure between CN107-18 (+) and ground (–).

The meter reads 0 VDC while the fuser is trying to warm up.

Y N

Go to BSD 10.5 and troubleshoot the Fuser on (L) signal (CN107-18) for an open.

If the wiring is OK, replace the PCU PWB. If the problem still exists, replace the Low Voltage Power Supply.

Measure between CN107-22 (+) and ground (–).

The meter reads 0 VDC while the fuser is trying to warm up.

Y N

Go to BSD 10.5 and troubleshoot the Heat Rod Sense (L) signal (CN107-22) for a short to ground.

If the wiring is OK, replace the PCU PWB. If the problem still exists, replace the Low Voltage Power Supply.

Replace the Low voltage power supply.

Go to BSD 10.5 in Section 7 and troubleshoot the Fuser connectors (CN1004, 1008, 1009) for an open circuit. If OK, replace the Fuser Module.

T2 OVER TEMPERATURE RAP

The fuser temperature is greater than 240°C.

INITIAL ACTION

Remove the Fuser Module and check the condition of the Fuser Connectors. Reinstall the Fuser Module.

Switch the power off wait 10 seconds and switch the power on. Recheck for the fault.

PROCEDURE

Allow the fuser to cool. Set up the meter to read +24 VDC. Measure between CN107-18 (+) and ground (–).

When the fuser is cold, the reading should be around 0 VDC. When the fuse warms up, the reading should switch to approximately 22 VDC.

The readings are OK.

Y N

Go to BSD 10.5 in Section 7 and trouble-shoot the Fuser on (L) signal for a short to ground CN107-18).

If the wiring is OK, replace the PCU PWB. If the problem still exists, replace the Low Voltage Power Supply.

Triac shorted, replace the Low Voltage Power Supply.

U0 IOT ROM ERROR RAP

A ROM error was detected.

INITIAL ACTION

Switch the power off wait 10 seconds and switch the power on. Recheck for the fault.

If the problem still exists, replace the PCU PWB.

U1 IOT RAM ERROR RAP

A RAM error was detected.

INITIAL ACTION

Switch the power off wait 10 seconds and switch the power on. Recheck for the fault.

If the problem still exists, replace the PCU PWB.

U2 IOT NVM RAM ERROR RAP

A NVM error was detected.

Many xerographic parameters and other values are written to the NVM on the PCU PWB every time the machine is powered off. These values can be corrupted when the printer is powered off and on too quickly, or when there is an irregularity in the power to the printer. This can produce a **U2** error code.

If the NVM is initialized without following the proper procedures the toner concentration setpoints will not match those for the developer housings in the printer. The printer will then attempt to adjust the toner concentration to values that may be out of range for the housings. The can result in incorrect toner concentration values, or the machine may hang-up with the “Adjusting Print Quality” message.

When taking a **U2** service call, you must carefully follow the steps in ADJ 3.3 and determine the current Toner Concentration Setpoints before you actual “Initialize the NVM”.

INITIAL ACTION

Switch the power off wait 10 seconds and switch the power on. Recheck for the **U2** fault.

If the problem still exists, refer to ADJ 3.3 NVM Initialization (**U2**) in section 4.

U3 IOT/ESS COMMUNICATION ERROR RAP

A communication error between the ESS and the IOT was detected.

INITIAL ACTION

Switch the power off wait 10 seconds and switch the power on. Recheck for the fault.

If the problem still exists, replace the PCU PWB.

If the problem still exists, replace the ESS PWB.

U4 OPTICS FAULT

A ROS problem was detected. The laser did not come on.

INITIAL ACTION

Switch the power off wait 10 seconds and switch the power on. Recheck for the fault.

Check to ensure that the printer covers are closed. Inspect the Laser Interlock (smaller of the two switches) to ensure that it is actuated.

PROCEDURE

Locate connector 1007. This is a small DC, two wire connector located above and to the right of the PCU PWB.

Set up the meter to read +5 VDC. Connect the meter to CN1007-2 (+) (this pin goes to the ROS assembly harness) and ground (–).

Open and close the Printer while monitoring the meter.

The meter reads 0 VDC when the Printer is open and switches to +5 VDC when the Printer is closed.

Y N

Go to BSD 6 in Section 7 and troubleshoot the Laser Interlock Switch circuit (CN113-12) for an open.

If no open exists, replace the PCU PWB. If the problem still exists, replace the Laser Interlock Switch

Go to BSD 6 in Section 7 Connector CN113 and check the following pins for a good connection:

A

- (CN113-11) GND.
- (CN113-10) SYNC.
- (CN113-8) VIDEO DATA.
- (CN113-7) LASER DIODE ON (L) +5 VDC.

If the wiring appears OK, replace the PCU PWB.

If the problem still exists, replace the ROS.

U5 POLYGON MOTOR FAULT

A ROS problem was detected. The Polygon Motor did not come up to the proper speed.

INITIAL ACTION

Switch the power off wait 10 seconds and switch the power on. Recheck for the fault.

PROCEDURE

Go to BSD 6 in Section 7 Connector CN113 and check the following pins for a good connection:

- (CN113-5) LASER LOCK.
- (CN113-4) POLYGON MOTOR LOCK (L) +5 VDC.
- (CN113-3) POLYGON MOTOR ON (L) +5 VDC.
- (CN113-2) GND.
- (CN113-1) +24 VDC INTERLOCKED.

If the wiring appears OK, replace the PCU PWB.

If the problem still exists, replace the ROS.

U6 MOTOR FAULT (DEVELOPER) RAP

The Developer Drive motor is not running.

*NOTE: This problem can be caused by arcing at the Print Drum Module spring contacts. If the **U6** code is intermittent and occasionally accompanied by a high pitch squeal, clean and reform the spring contacts. It the problem persists replace the Print Drum Module.*

INITIAL ACTION.

Remove and inspect both developer modules.

Check to ensure no foreign material is wedged in the drive gears and the gears on both modules rotate freely.

Reinstall both developer modules.

Check the Toner Collector for “layered” toner (sand-art effect). If layered toner is present, refer to OF8 Arcing RAP.

Switch the power off wait 10 seconds and switch the power on. Recheck for the fault.

PROCEDURE

Set up the meter to read +5 VDC. Connect the meter to CN117-2 and ground (–).

Enter IOT normal diagnostics. Scroll to the MOTOR TEST program and press **Form Feed [1]** to switch on the motors while observing the meter.

The meter reads + 5 VDC before the motor program starts and 0 VDC when the motor program is running.

Y N

Set up the meter to read +24 VDC. Connect the meter to CN117-3 and ground (–).

A B

The meter reads + 24 VDC.

Y N

Go to BSD 9.5 in Section 7 and troubleshoot the +24 VDC (CN117-3) for an open.

If no open exists, replace the PCU PWB.

Go to BSD 9.5 in Section 7 and troubleshoot the Developer Motor On signal (CN117-2) for an open.

If no open exists, replace the PCU PWB. If the problem still exists, replace the Developer Drive Motor.

Press **Media Server [2]** to stop the MOTOR TEST program.

Set up the meter to read +5 VDC. Connect the meter to CN117-1 and ground (–).

Press **Form Feed [1]** to switch on the motors while observing the meter.

The meter reads + 5 VDC before the motor program starts and 0 VDC when the motor program is running.

Y N

Go to BSD 9.5 in Section 7 and troubleshoot the Developer Motor Lock signal (CN117-1) for an open.

If no open exists, replace the PCU PWB. If the problem still exists, replace the Developer Drive Motor.

Go to BSD 9.5 in Section 7 and troubleshoot the GND (CN117-4) for an open.

If OK, replace the PCU PWB. If the problem still exists, replace the Developer Drive Motor.

U7 MOTOR FAULT (MAIN) RAP

The Transfer Drum Home Position Sensor did not detect Transfer Drum rotation.

(C55/C55mp)
Mechanical bind is the most common cause of this fault, specifically binding of the auger in the Print Drum. This is usually (but not always) accompanied by a clicking noise from the top of the machine.

If a clicking noise is heard, enter “Normal Diagnostics” (General Procedures) and attempt to run the **Motor Test**. Note the sounds of the machine. Stop the test, remove the print drum, close the printer, and run the **Motor Test** again. Note any changes in the sounds. If there is a noticeable change in the sound, examine the Print Drum by opening the Waste Toner trap door and probing with a small screwdriver. If this area is clogged, you can remove the left side cover by removing the trap door and removing 4 screws. This area can then be vacuumed out before reassembly.

All Printers, if a thumping noise is heard, check to see if the Main Drive Motor Belt is slipping.

INITIAL ACTION

Remove and inspect the Print Drum Module.

Check to ensure that no foreign material is wedged in the Print Drum Module drive gears.

Rotate the Transfer Drum by hand to ensure that it moves. Check for any binding caused by a tucked over Transfer Drum Cleaner Brush Blade

Reinstall the Print Drum Module.

Switch the power off wait 10 seconds and switch the power on. Recheck for the fault.

PROCEDURE

Enter IOT normal diagnostics. Scroll to the MOTOR TEST program and press **Form Feed [1]** to switch on the motors while observing the Main Drive Motor.

The Main Drive Motor is rotating.

Y N

The Main Motor is noisy.

Y N

Go to BSD 9.3 in Section 7 and troubleshoot the +24 VDC Interlocked (CN112-5).

If OK, replace the PCU PWB. If the problem still exists, replace the Main Drive Motor.

Go to BSD 9.3 in Section 7 and check (CN112) to ensure it is plugged in.

If the problem still exists replace the PCU PWB. If the problem still exists, replace the Main Drive Motor.

Press **Media Server [2]** to stop the MOTOR TEST program.

Scroll to the SWITCH SCAN program and select Scan Row 04. Press **Form Feed [1]**.

Open the Printer. Slowly rotate the Transfer Drum while observing the Magenta LED.

The Magenta LED switches on and off.

Y N

A B

A B

Go to BSD 9.13 in Section 7 and trouble-shoot the Transfer Drum Home Position signal, +5 VDC, and ground (CN103-17, CN313-2, 1, 3) for an open or a short to ground.

If the wiring is OK, replace the PCU PWB. If the Problem still exists replace the Transfer Drum Home Position Sensor.

Replace the PCU PWB.

W1 COLOR DEV MOD RAP

This code indicates that the Color Developer module is near the end of life (10% remaining).

When a J5 occurs the customer should install a new Color Developer Module.

When the new Color Developer Module is installed, the J5 and W1 codes will no longer appear.

If the J5 code still exists, refer to the J5 RAP

W2 BLACK DEV MOD RAP

This code indicates that the Black Developer module is near the end of life (10% remaining).

When a J6 occurs the customer should install a new Black Developer Module.

When a new Black Developer Module is installed, the J6 and W2 codes will no longer appear.

If the J6 code still exists, refer to the J6 RAP

W3 PRINT DRUM MOD RAP

This code indicates that the Photoreceptor module is near the end of life (10% remaining).

When a J8 occurs the customer should install a new Print Drum Module.

When a new Print Drum Module is installed, the J8 and W3 codes will no longer appear.

If the J8 code still exists, refer to the J8 RAP

W4 FUSER MOD RAP

This code indicates that the Fuser module is near the end of life (10% remaining).

When a J9 occurs the customer should install a new Fuser Module.

When the new Fuser Module is installed, the J9 and W4 codes will no longer appear.

If the J9 code still exists, refer to the J9 RAP

W5 FUSER OIL BOTTLE/PAD RAP

This code indicates that the Oil Bottle and Pad are near the end of use.

When a JA occurs the customer should install a new Fuser Oil Bottle and Pad.

When a new Oil Bottle is installed, the JA and W5 codes should no longer appear.

If the JA code still exists, refer to the JA RAP

OF1 DEAD PRINTER RAP

This RAP is used when the Printer is dead. There is no display, no Control Panel LEDs are on, and no motors or fans are heard when the printer is switched on.

NOTE: A description of the C55 and NC60 IOT and ESS boot routines can be found in Section 6 of this manual. Refer to the Section 6 Table of Contents.

INITIAL ACTION

Remove the power cord and check for AC power at the wall outlet. If there is no power at the wall outlet, ask the customer to call an electrician to restore the AC power.

If power is available at the wall outlet, disconnect the power cord from the printer. Plug the cord into the wall and check for AC power at the printer end of the power cord. If power is available at the wall outlet but not available at the printer end, replace the power cord.

PROCEDURE

WARNING

Disconnect all network, and workstation inputs to the printer.

A

A

Switch the printer off wait 10 seconds and switch the printer on while listening to the IOT and observing the Message Display.

The IOT runs when the printer is switched on.

Y N

Set up the meter to measure +5 VDC. Measure between CN108-1 (+) and CN108-2 (–).

The meter indicates +5 VDC.

Y N

Go to OF1.1 + 5 VDC RAP

Set up the meter to measure +5 VDC. Measure between CN310-11 (+) and CN310-10 (–).

The meter indicates +5 VDC.

Y N

Replace the Connector PWB.

Go to OF2 CONTROL PANEL RAP.

Switch the printer off wait 10 seconds and switch the power on while observing the LEDs on the ESS PWB.

The ESS appears to boot normally and the Control Panel is blank.

Y N

Check CN104, the ESS to IOT connector. If OK, go to OF6A (C55/C55mp) or OF6B [NC60].

Go to OF2 CONTROL PANEL RAP

OF1.1 +5 VDC RAP

This RAP is used when the +5 VDC is not present at the PCU PWB. The printer is dead, the display and LEDs are off. No motors or fans are heard when the printer is switched on.

INITIAL ACTION

Switch the Printer off.

WARNING

Disconnect all network, and workstation inputs to the printer.

PROCEDURE

Loosen the two thumb screws on the rear of the ESS and slide the ESS about half-way out of the printer. Switch the printer on.

The printer is still dead, the display and LEDs are off. No motors or fans are heard when the printer is switched on.

Y N

The printer booted when it was switched on. The display is now a circling asterisk.

Switch the printer off. If the printer does NOT have a NIC, replace the ESS.

If the printer does have a NIC, slide the ESS back into the printer and remove the NIC. Switch the Printer on.

The Printer is still dead, the display and LEDs are off. No motors or fans are heard when the printer is switched on.

Y N

The printer booted when it was switched on. The display is now a circling asterisk.

Replace the NIC

A B

A B

Replace the ESS.

Switch the printer off. Disconnect CN104 from the ESS Interface PWB. Switch the printer on.

The printer is still dead, the display and LEDs are off. No motors or fans are heard when the printer is switched on.

Y N

The printer booted when it was switched on. The display is now a circling asterisk.

Switch the printer off. Reconnect CN104. Disconnect CN102 and CN103 from the Floppy Drive. Switch the printer on.

The printer is still dead, the display and LEDs are off. No motors or fans are heard when the printer is switched on.

Y N

The printer booted when it was switched on. The display is now a circling asterisk.

Replace the Floppy Drive.

If the printer does NOT have a hard drive, replace the ESS Interface PWB.

If the printer has a Hard Drive, switch the printer off. Reconnect CN102 and CN103. Disconnect CN101 from the Hard Drive. Switch the printer on.

The printer is still dead, the display and LEDs are off. No motors or fans are heard when the printer is switched on.

Y N

C D E

C D E

The printer booted when it was switched on. The display is now a circling asterisk.

Replace the Hard Drive.

Replace the ESS PWB.

Switch the printer off. Disconnect CN108 from the PCU PWB.

Connect the meter between CN108-1 (+) and CN108-2 (–). The meter should be connected to the connector side NOT the PWB side.

Switch the printer on.

The meter indicates +5 VDC.

Y N

Refer to BSD 1.2 and Check CN108 to CN707 for an open.

If no open is found, remove the Low Voltage Power Supply (REP. 3.1).

Remove Fuses F701, F702, and F703. Use the Ohmmeter to check these fuses.

If any of the fuses test bad, install a new fuse reassemble the printer and recheck.

If all fuses check OK, replace the Low Voltage Power Supply.

Replace the PCU PWB. If the problem still exists replace the Connector PWB.

OF2 CONTROL PANEL RAP

This RAP is used when the Control Panel Message Display, LEDs, or Buttons do not work.

INITIAL ACTION

Switch the power off wait 10 seconds and switch the power on and recheck for the fault.

Enter IOT normal diagnostics (**Menu [3]**, **Enter [7]** + Power On) and check the operation of the Control Panel. If the Control Panel works OK in diagnostics, refer to BSD 6 and check the PCU to ESS connectors CN104. If the connections are OK, replace the ESS PWB.

PROCEDURE

Classify the problem into one of the following categories, then go to the appropriate subsection of the RAP.

OF2.1 The Message Display top row consists of ■'s. The bottom row is blank.

OF2.2 The Message Display is blank (no * during IOT Boot).

OF2.3 The message display is flickering off and on, or displaying random characters.

OF2.4 Message display works OK, LEDs do not work correctly.

OF2.5 Message display works OK, Switches do not work correctly.

OF2.6 * Circles Continuously.

OF2.7 Rebooting message never clears.

OF2.1 The Message Display top row consists of ■'s. The bottom row is blank.

PROCEDURE

Switch the power off wait 10 seconds and switch the power on, while listening to the IOT.

The IOT runs (boots up) when the printer is switched on.

Y N

Refer to BSD 6 and check the RES signal (CN104-8) for a short to ground.

Refer to BSD 2.1 and check the D3 signal (CN103-25) for a short to ground.

It the wiring is OK, replace the PCU PWB. If the problem still exists, replace the Control Panel PWB.

Refer to BSD 2.1 and check the following signals:

- CN103-22 Read/Write for an open.
- CN103-23 Register Select for an open or a short to ground.
- CN103-24 Display Enable for an open or a short to ground.
- CN103-25 Data 3 for an open.
- CN103-26 Data 2 for an open.
- Refer to BSD 10.2 and check CN103-18 Strobe 2 for a short to ground.
- Refer to BSD 10.4 and check CN103-19 Strobe 1 for a short to ground.

If all appear OK, replace the Control Panel PWB.

If the problem still exists, replace the PCU PWB.

OF2.2 The Message Display is blank (no * during IOT Boot).

PROCEDURE

Switch the power off wait 10 seconds and switch the power on, while listening to the IOT.

The IOT runs (boots up) when the printer is switched on.

Y N

Set up the meter to measure +5 VDC. Measure between CN310-10 (+) and CN310-11 (–).

The meter indicates +5 VDC.

Y N

Go to OF1.1 +5 VDC RAP.

Refer to BSD 2.1 and check the +5 VDC CN310-11 and DC COM CN310-10 from the Connector PWB to the Control Panel. If OK, replace the Control Panel PWB.

Refer to BSD 2.1 and check the following signals:

- CN103-22 Read/Write for a short to ground.
- CN103-26 Data 2 for a short to ground.
- CN103-27 Data 1 for an open.
- CN103-28 Data 0 for an open.

Refer to BSD 6 and check the following signals:

- CN104-1 STS (Status) for an open or a short to ground.
- CN104-5 SRDY (Status Ready) for an open.

If all appear OK, replace the Control Panel PWB.

If the problem still exists, replace the PCU PWB.

OF2.3 The message display is flickering off and on, or displaying random characters.

PROCEDURE

Refer to BSD 2.1 and check the following signals:

- If the Message is flickering off and on, check CN103-27 (DATA 1) for an open.
- If the Message is illegible, and the K LED is on all the time, check CN103-25 (DATA 3) for a short to ground.
- If the Message is illegible, and the M LED is on all the time, check CN103-27 (DATA 1) for a short to ground.
- If the Message is illegible, and the Y LED is on all the time, check CN103-28 (DATA 0) for a short to ground.

If all appear OK, replace the Control Panel PWB,

If the problem still exists, replace the PCU PWB.

OF2.4 Message display works OK, LEDs do not work correctly.

PROCEDURE

If the On Line LED never comes on, refer to BSD 6 and check the following:

- CN104-6 CRDY (Command Ready) for an open.
- CN104-2 CMD (Command) for an open or a short.

If the LEDs are flickering off and on, refer to BSD 2.1 and check the following:

- CN103-21 LED Enable for a short to ground.

If the LEDs are off, refer to BSD 2.1 and check the following:

- CN103-21 LED Enable for an open.

If all appear OK, replace the Control Panel PWB.

If the problem still exists, replace the PCU PWB.

OF2.5 Message display works OK, Switches do not work correctly.

PROCEDURE

When the switches do not work properly, refer to BSD 2.1 and check the following:

- CN103-20 Switch Enable for an open or a short.

If OK, replace the Control Panel PWB.

If the problem still exists, replace the PCU PWB.

OF2.6 * Circles Continuously.

PROCEDURE

When the * is circling continuously, it is not receiving messages from the ESS PWB.

Perform the following checks. Retry between each check.

1. Remove and reseat the ESS PWB. (you may want to remove the left side cover and the EME shield to ensure that the PWB is seated.
2. Disconnect the NIC, if one is present.
3. Remove and reseat the DRAM SIMM's on the ESS.
   (C55/C55mp) If there are more than two SIMM's check to ensure that the larger value SIMM's are installed in J8 and J9
4. **(C55/C55mp)** Check the version of the ESS PWB. The number is written in yellow ink, parallel to the ESS face plate near the bottom of the ESS. The bottom of the ESS is the point FURTHEST away from the DRAM SIMM's. If the ESS PWB number is **160K43690 or 160K49680** Replace the ESS PWB.
5. **(C55/C55mp)** Reconfigure the ESS PWB to the original RAM configuration (2-8 MB SIMM's) this will verify if this is a DRAM problem. If the printer works in the original configuration but not with customers memory, replace the ESS PWB.
6. **(C55/C55mp)** If the ESS IF PWB (PL 3.1 #6, 160K32850) has been replaced, check to see that it has a plastic insulating washer at each mounting hole. Some of the spare 160K32850 were manufactured without these washers. (A purge is under way to fix this problem. In the meantime, contact your Technical Support Organization)
7. Check CN104 harness (between PCU PWB and IF PWB).
8. Replace PCU PWB.
9. Replace ESS IF PWB (160K32850).

OF2.7 Rebooting message never clears.

When the Rebooting message is displayed the ESS is booting and waiting for a ready message from the IOT. The rebooting message usually lasts for approximately 1 minute and is followed by the Initializing message.

PROCEDURE

Switch the power off wait 10 seconds and switch the power on and recheck for the fault.

1. Switch the power off and unplug the ESS by sliding it out about 6 inches.
2. Run the IOT Test Print.
   a. Hold **Menu [3]** and **Enter [7]** and switch the power on.
   b. User **Menu [3]** to scroll to Test Print.
   c. Press **Form Feed [1]**.
4. If you cannot enter diagnostics or the test print does not run, replace the PCU PWB.
5. If the Test Print is produced, replace the ESS PWB.

OF3 TRAY 1 PAPER SIZE SENSING RAP

This RAP is used to troubleshoot the paper size sensing for Tray 1. Use this RAP when the paper size that is loaded is not the same size that is being sensed.

INITIAL ACTION

Remove Tray 1 and check the movable length stop. Make sure the tab which actuates the sensors is not broken.

Carefully load the paper size which is not being detected correctly.

Switch the power off wait 10 seconds and switch the power on. Make a print of the paper size which is loaded to recheck for the fault.

PROCEDURE

Enter IOT normal diagnostics. Scroll to the SWITCH SCAN program and select Scan Row 01. Press **Form Feed [1]**.

Remove Cassette 1. Observe the LED's.

The Cyan, Magenta and Yellow LEDs are all off.

Y N

Refer to BSD 7.2 and check the following:

- If all three LEDs are on, check the +5 VDC, CN107-7 for an open.
- Cyan LED on, check Paper size 0, CN107-8 for an open.
- Magenta LED on, check Paper Size 1, CN107-9 for an open.
- Yellow LED on, check Paper Size 2, CN107-10 for an open.

If wiring is OK, replace the PCU PWB. If the problem still exists, replace the Cassette PWB.

A

Press **Media Server [2]**, select Scan Row 02. Press **Form Feed [1]**. Observe the LED's.

The Black and Cyan LEDs are off.

Y N

Refer to BSD 7.2 and check the following:

- Black LED on, check Paper size 3, CN107-11 for an open.
- Cyan LED on, check Paper Size 4, CN107-12 for an open.

If wiring is OK, replace the PCU PWB. If the problem still exists, replace the Cassette PWB.

With Scan Row 02 still selected move the length stop to the Legal (14") position (Figure 2-3).

Insert the cassette. Observe the LED's.

The Cyan LED goes on when the cassette is inserted.

Y N

Refer To BSD 7.2 and check Paper Size 4, CN107-12 for a short to ground.

If wiring is OK, replace the PCU PWB. If the problem still exists, replace the Cassette PWB.

Remove the cassette and move the length stop to the A4 (11.7")"position.

Insert the cassette. Observe the LED's.

The Black LED goes on when the cassette is inserted.

Y N

Refer To BSD 7.2 and check Paper Size 3, CN107-11 for a short to ground.

B C

If wiring is OK, replace the PCU PWB. If the problem still exists, replace the Cassette PWB.

Press **Media Server [2]**, select Scan Row 01. Press **Form Feed [1]**.

Remove the cassette and move the length stop to the Letter (11")"position.

Insert the cassette. Observe the LED's.

The Yellow LED goes on when the cassette is inserted.

Y N

Refer To BSD 7.2 and check Paper Size 2, CN107-10 for a short to ground.

If wiring is OK, replace the PCU PWB. If the problem still exists, replace the Cassette PWB.

Remove the cassette and move the length stop to the Executive (10.5")"position.

Insert the cassette. Observe the LED's.

The Magenta LED goes on when the cassette is inserted.

Y N

Refer To BSD 7.2 and check Paper Size 1, CN107-9 for a short to ground.

If wiring is OK, replace the PCU PWB. If the problem still exists, replace the Cassette PWB.

Replace the PCU PWB. If the problem still exists, replace the ESS PWB.

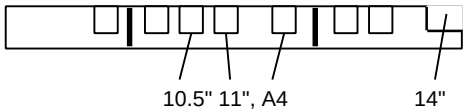


Figure 2-3 Length Stop Location

OF4 TRAY 2 PAPER SIZE SENSING RAP

This RAP is used to troubleshoot the paper size sensing for Tray 2. Use this RAP when the paper size that is loaded is not the same size that is being sensed.

INITIAL ACTION

Remove Tray 2 and check the movable length stop. Make sure the tab which actuates the sensors is not broken.

Carefully load the paper size which is not being detected correctly.

Switch the power off wait 10 seconds and switch the power on. Make a print of the paper size which is loaded to recheck for the fault.

PROCEDURE

Enter IOT normal diagnostics. Scroll to the SWITCH SCAN program and select Scan Row 03. Press **Form Feed [1]**.

Remove Cassette 2. Remove the Length Stop and re-insert Cassette 2 without the stop. Observe the LEDs.

Cyan, Magenta, and Yellow are all On.

Y N

Refer to BSD T2 7.2 and check the following:

- Cyan is Off. Check the T2 Paper Size 0 signal, CN109-1 for a short to ground.
- Magenta is Off. Check the T2 Paper Size 1 signal, CN109-2 for a short to ground.
- Yellow is Off. Check the T2 Paper Size 2 signal, CN109-3 for a short to ground.

A B

If OK, replace the T2 Cassette PWB. If problem still exists, replace the PCU PWB.

With Scan Row 03 still selected remove the cassette and put the Length Stop in the Executive (10.5") position (Figure 2-4).

Insert the cassette and observe the LEDs.

Cyan is On, Magenta is Off, and Yellow is ON.

Y N

Refer to BSD T2 7.2 and check the T2 Paper Size 1 signal, CN109-2 for an open.

If OK, replace the T2 Cassette PWB. If problem still exists, replace the PCU PWB.

Remove the cassette and put the Length Stop in the Letter (11") position.

Insert the cassette and observe the LEDs.

Cyan is On, Magenta is Off, and Yellow is On.

Y N

Refer to BSD T2 7.2 and check the T2 Paper Size 1 signal, CN109-2 for an open.

If OK, replace the T2 Cassette PWB. If problem still exists, replace the PCU PWB.

Remove the cassette and put the Length Stop in the (A4) position.

Insert the cassette and observe the LEDs.

C

Cyan is On, Magenta is On, and Yellow is Off.

Y N

Refer to BSD T2 7.2 and check the T2 Paper Size 2 signal, CN109-3 for an open.

If OK, replace the T2 Cassette PWB. If problem still exists, replace the PCU PWB.

Remove the cassette and put the Length Stop in the Legal (14") position.

Insert the cassette and observe the LEDs.

Cyan is Off, Magenta is On, and Yellow is Off.

Y N

Replace the T2 Cassette PWB.

Replace the PCU PWB.

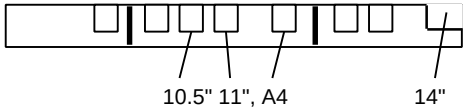


Figure 2-4. Length Stop Location

OF5 LOAD PAPER RAP

This RAP is used to troubleshoot a constant load paper message.

INITIAL ACTION

Remove the cassette and check the actuator for the Tray Empty Sensor to ensure it is not broken.

Switch the power off wait 10 seconds and switch the power on to recheck for the fault.

PROCEDURE

Refer to OF5.1 for Tray 1 Load Paper problems.

Refer to OF5.2 for Tray 2 Load Paper problems.

OF5.1 Constant Tray 1 Load Paper message.

Enter IOT normal diagnostics. Scroll to the SWITCH SCAN program and select Scan Row 01. Press **Form Feed [1]**.

Remove Cassette 1. Observe the Black LED while actuating and deactuating the Tray 1 Empty Sensor.

The Black LED switches off and on.

Y N

Refer to BSD 7.1 and check the Tray Empty Sensor circuit CN102-6, 4, 5 for an open.

If OK, replace the Tray Empty Sensor. If the problem still exists, replace the PCU PWB.

Replace the PCU PWB. If the problem still exists, replace the ESS PWB.

OF5.2 Constant Tray 2 Load Paper message.

Enter IOT normal diagnostics. Scroll to the SWITCH SCAN program and select Scan Row 03. Press **Form Feed [1]**.

Remove Cassette 2. Observe the Black LED while actuating and deactuating the Tray 2 Empty Sensor.

The Black LED switches off and on.

Y N

Refer to BSD T2 7.1 and check the T2 Tray Empty Sensor circuit CN109-4, 5, 6 for an open.

If OK, replace the T2 Tray Empty Sensor. If the problem still exists, replace the PCU PWB.

Replace the PCU PWB. If the problem still exists, replace the ESS PWB.

OF6A ESS RAP (C55/C55mp)

This RAP is used when you suspect a problem with the (C55/C55mp) ESS.

PROCEDURE

Switch the Printer off. Enter IOT normal diagnostics (**Menu** + **Enter**, then Power On). Scroll to TEST PRINT and press **Form Feed** to run an IOT test print.

The Test Print is produced.

Y N

Refer to Section 2 Table of contents and fix the IOT Problem.

Switch the printer off.

WARNING

Have the customer disconnect all network and workstation inputs to the printer.

Remove the Left Cover. If the Printer has a NIC card, remove it.

Locate the five LEDs (CR1~CR5) on the rear of the ESS PWB. They are just below the parallel port.

When the printer is switched on, you should see the LEDs light in the following sequence.

CR5 on,
All LEDs on.
CR5 and CR3 on.

Switch the Printer on while observing the LEDs. If you need to do it several times, be sure to wait 10 seconds after power off before switching the Printer back on.

The LEDs operated normally.

Y N

A B

A B

CR5 came on.

Y N

Refer to BSD 1.2 and check the +5 VDC to the ESS PWB (CN104-16~20). If OK, replace the ESS PWB.

Replace the ESS PWB

Enter the Off Line mode and make a test print.

A Test Print was produced.

Y N

Replace the ESS PWB.

Determine the Port being used then select from one of the following:

- Customer is using SLIC
  - Check the connector from the PC to ensure it is seated properly.
  - Check for any bent or deformed pins.
  - Replace the SLIC PWB. If the problem still exists replace the ESS PWB.
- Customer is using Parallel
  - Check the connector from the PC to ensure it is seated properly.
  - Check for any bent or deformed pins.
  - If the problem still exists replace the ESS PWB.
- Customer is using NIC

Examine the NIC card for any obvious problems. Look for bent or deformed pins.

Set up the meter to measure +5 VDC and check for +5 VDC between pins 1 and 2 (top 2 pins) of the NIC connector.

+5 Volts is available.

Y N

Replace the ESS PWB.

Replace the NIC PWB.

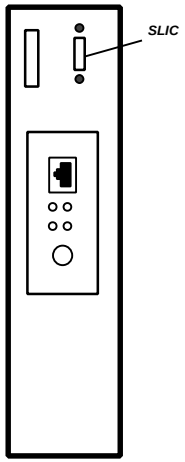


Figure 1. ESS PWB

OF6B ESS RAP [NC60]

This RAP is used when you suspect a problem with the [NC60] ESS.

PROCEDURE

Switch the Printer off. Enter IOT normal diagnostics **[3]** + **[7]**, then Power On. Use **[3]** to scroll to TEST PRINT and press **[1]** to run an IOT test print.

The Test Print is produced.

Y N

Refer to Section 2 Table of contents and fix the IOT Problem.

Switch the printer off, wait 10 seconds then switch the printer on.

Refer to Figure 1 and Locate the POWER and FAIL LEDs on the rear of the ESS PWB. Observe these two LEDs through the two cutouts.

The POWER LED is on.

Y N

Refer to BSD 1.2 and check the +5 VDC to the ESS PWB (CN104-16~20). If OK, replace the ESS PWB.

The FAIL LED is <u>off</u>.

Y N

When the Fail LED is on, it indicates a ESS boot failure, replace the ESS.

Power on Version number was displayed.

Y N

Replace the ESS.

The Control Panel displayed *'s, then displayed Initializing and the copyright statement.**

Y N

A B

A B

Check the plug in RAM to ensure it is seated properly and is at least 32 MB.

If the problem still exists replace the ESS.

Press **[2]** until Service Menu is displayed. Press **[5]** until Config Sheet is displayed, then press **[1]** to make a test print.

A Test Print was produced.

Y N

Replace the ESS PWB.

Determine the Port being used then select from one of the following:

- Customer is using the Serial interface.
  - Check the connector from the PC to ensure it is seated properly.
  - Check for any bent or deformed pins.
  - If the problem still exists, replace the ESS PWB.
- Customer is using the Parallel interface.
  - Check the connector from the PC to ensure it is seated properly.
  - Check for any bent or deformed pins.
  - If the problem still exists replace the ESS PWB.
- Customer is using 10 MB NIC (No Optional NIC Card).
  - Check the NIC connector to ensure it is seated properly.
  - Check for any bent or deformed pins.
  - If the problem still exists replace the ESS PWB.
- Customer is using 100 MB NIC or Token Ring (Optional NIC Card).
- Examine the NIC card for any obvious problems. Look for bent or deformed pins.
- Set up the meter to measure +5 VDC and check for +5 VDC between pins 1 and 2 (top 2 pins) of the NIC connector.

+5 Volts is available.

Y N

Replace the ESS PWB.

Replace the NIC PWB.

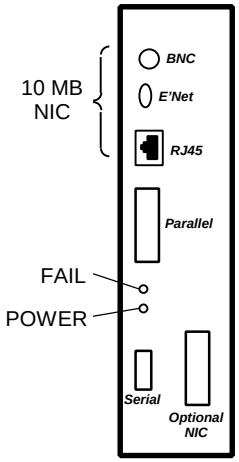


Figure 1. ESS PWB

OF7 ESS BOOT FAILURE ERROR CODES [NC60]

During the ESS Boot process several tests and checks are performed.

If a failure occurs, and the ESS can communicate with the Control Panel, an error code will be displayed.

If the ESS failure prevents communication with the Control Panel, the error will be indicated by a flashing Fail LED on the ESS PWB. There will be a one second pause then a number of flashes which represents the failure.

If partial communication has been established, you may also see a flashing Magenta LED on the Control Panel.

Table 1 Boot Error Codes

Message	LED Flash Rate	Description	Action
0001-ESS	1	Major ESS failure.	Replace ESS.
0001-BASE RAM	2	Base Ram failure.	Replace ESS.
0001-BASE ROM	3	Rom failure.	Replace ESS.
0001-ASIC	4	ASIC Interrupt Controller failure.	Replace ESS.
0001-DMA	5	DMA Controller failure.	Replace ESS.
0001-COMM	6	Parallel or Serial Port failure.	Replace ESS.
1000-IOT	8	ESS - IOT Communication failure.	Check CN104 on PCU PWB. If OK, replace the ESS.
0010-DISK	9	Hard Disk failure.	Check Hard Disk connectors. If OK, replace the Hard Disk.
0101-SIMM1	10	Simm 1 board failure.	Check connection. If OK, replace Simm 1.
0102-SIMM2	11	Simm 2 board failure.	Check connection. If OK, replace Simm 2.
0103-SIMM3	12	Simm 3 board failure.	Check connection. If OK, replace Simm 3.
0104-SIMM4	13	Simm 4 board failure.	Check connection. If OK, replace Simm 4.
2000-XIE RAM	15	Image Enhancement RAM failure.	Replace ESS.
3000-TOKENRING	16	Token Ring Card failure.	Check NIC connection. If OK, replace Simm.
4000-NIC	17	Ethernet Card failure.	Check NIC connection. If OK, replace Simm.
0040-ROM BOARD	18	Flash ROM failure.	Replace ESS.
6000 FLOPPY	19	Floppy Drive failure.	Check Floppy connection. If OK, replace Floppy Drive.
7000-DPTEK	20	DP-TEK Chip failure	Replace ESS.
5000-MEMORY	None	Memory not large enough	Replace ESS.
********** **********	None	Screen full of (Asterisks)	Refer to OF6B

OF8 ARCING RAP

This RAP is used when Arcing is occurring between the Print Drum and the contacts which supply the Charge voltage.

INITIAL ACTION

Inspect the Toner Collector for layers of color and black toner in the toner collector. This is sometimes referred to as the “sand-art” effect. It is caused by solid development during the copy quality setup process.

If the Charge Scorotron or Charge Grid connection is faulty, it can result in no or very low charge. Since this is a “write black” printer,” the print drum will develop a solid image when there is no charge.

PROCEDURE

Check and clean the Charge and Grid contacts located on the right side of the Print Drum. Check and clean the Charge and Grid contact points on the frame side of the printer.

Remove the Fuser Module. Clean the bracket that holds the Erase Lamp assembly. Look for fibers from the exit discharge brush.

If the problem persists, refer to BSD 9.4 in Section 7 and check the Red leads to the Print Drum Module for an open.

Replace the Print Drum Module.

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IQ 1 IMAGE QUALITY DEFECT ENTRY RAP

PROCEDURE

CAUTION

The drum can become light-shocked if exposed to external light sources for three minutes or longer. The result is poor print quality performance (usually appearing as dark streaks). This can be corrected in most cases by "dark resting" the drum (with the machine in Standby and all covers properly installed). Do not allow the drum to be exposed to external light sources.

1. Select the SERVICE Menu and print the PQ Set test patterns. These test patterns are generated in the ESS.
2. Print the IOT Test Pattern.
3. Inspect the test prints for image quality defects.

   NOTE: If a defect is present on both prints, the defect is probably IOT related. If the defect is not present on both prints, the defect is probably ESS related. Be careful with this assumption however, since the IOT test pattern may mask some defects.

   NOTE: Look carefully at the basic colors (K, C, M, Y). If a defect only shows on one of the basic colors, suspect a developer related problem.
4. Locate The Defect in Table 1, and perform the corresponding corrective action.

<table>
<tr><th>Defect Name / Description</th><th>Possible Causes</th><th>Corrective Action</th></tr>
<tr><td>1. BACKGROUND (OVERALL).</td><td>1. Density out of adjustment.</td><td>1. Perform the Density and Color Balance Adjustment. (ADJ. 3.1).</td></tr>
<tr><td></td><td>2. Color balance out of adjustment.</td><td>2. Perform the Density and Color Balance Adjustment. (ADJ. 3.1).</td></tr>
<tr><td></td><td>3. Print Drum Module failure.</td><td>3. Replace the Print Drum Module.</td></tr>
<tr><td></td><td>4. Developer failure or near end of life.</td><td>4. Replace the developer module(s).</td></tr>
<tr><td></td><td>5. Print Drum Arcing.</td><td>5. Refer to OF8 Arcing RAP in Section 2.</td></tr>
<tr><td></td><td>6. New developer assembly did not initialize.</td><td>6. Run a Diagnostic Sheet and check the Toner Concentration Setpoints for newly installed developer assembly. If the Setpoints are at 70 (default), replace the developer assembly.</td></tr>
<tr><td></td><td>7. Dirty Printer (Sump Full).</td><td>7. Refer to BSD 9.21 and check the Waste Toner Full signal, CN102-3, for a short to ground.</td></tr>
<tr><td></td><td>8. Extraneous light leak.</td><td>8. Ensure the printer is not in direct sunlight.</td></tr>
<tr><td></td><td>9. Temperature/RH Sensor failure.</td><td>9. If the readings on the diagnostic sheet are out of range (RH=0 or RH > 100, or Temp=0), refer to the chart below:
<table><tr><th>Diag. Sheet</th><th>Refer to BSD 9.19 and check:</th></tr><tr><td>RH=0</td><td>CN105-1, Humidity Sense, for a short to ground.</td></tr><tr><td>RH > 100</td><td>CN105-1, Humidity Sense, for an open.
CN105-2, Humidity Sense, GND for an open.</td></tr><tr><td>Temp=0</td><td>CN105-5, Temp. Sense, for an open or short to ground.</td></tr></table>If the wiring checks OK, replace the Temperature/Humidity Sensor.</td></tr>
</table>

<table>
<tr><th>Defect Name / Description</th><th>Possible Causes</th><th>Corrective Action</th></tr>
<tr><td rowspan="3">2. BACKGROUND (BLACK).</td><td>1. Developer Failure.</td><td>1. Replace the Black Developer Module.</td></tr>
<tr><td>2. New developer assembly did not initialize.</td><td>2. Run a Diagnostic Sheet and check the Toner Concentration Setpoints for newly installed developer assembly. If the Setpoints are at 70 (default), replace the developer assembly.</td></tr>
<tr><td>3. No Black Developer Bias.</td><td>3. Refer to BSD 9.1 and check the Black Developer Bias voltage. If the voltage is present, check the Black Developer Bias lead for an open. If no bias is present, replace the High Voltage Power Supply. If the problem still exists, replace the black developer module.</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td rowspan="3">3. BACKGROUND (COLOR).</td><td>1. Developer Failure.</td><td>1. Replace the Color Developer Module.</td></tr>
<tr><td>2. No Grid Low signal.</td><td>2. Refer to BSD 9.1 and check the Grid Bias (Low) signal CN106-8 for a short to ground. If OK, replace the color developer housing.</td></tr>
<tr><td>3. Temperature/RH Sensor failure.</td><td>3. If the readings on the diagnostic sheet are out of range (RH=0 or RH > 100, or Temp=0), refer to the chart below:
<table>
<tr><th>Diag. Sheet</th><th>Refer to BSD 9.19 and check:</th></tr>
<tr><td>RH=0</td><td>CN105-1, Humidity Sense, for a short to ground.</td></tr>
<tr><td>RH > 100</td><td>CN105-1, Humidity Sense, for an open.
CN105-2, Humidity Sense, GND for an open.</td></tr>
<tr><td>Temp=0</td><td>CN105-5, Temp. Sense, for an open or short to ground.</td></tr>
</table>
If the wiring checks OK, replace the Temperature/Humidity Sensor.</td></tr>
<tr><td colspan="3"></td></tr>
</table>

Defect Name / Description	Possible Causes	Corrective Action
4. BACKGROUND (CYAN).	1. Overtoning	1. Refer to ADJ 9.1 step 11 and complete the procedure if required.
	2. No Cyan Bias or constant Cyan Toner Dispensing.	2. Refer to BSD 9.1 and check the Cyan Developer Bias voltage. If no voltage is present replace the High Voltage Power Supply If the voltage is OK check the Cyan Developer Bias lead CN803-1 for an open If the wiring is OK, refer to BSD 9.10 and check the Cyan Toner Solenoid CN115-12 for a short to ground. If no short is present, replace the color developer module.
5. BACKGROUND (MAGENTA).	1. Overtoning	1. Refer to ADJ 9.1 step 11 and complete the procedure if required.
	2. No Magenta bias or constant Magenta Toner Dispensing.	2. Refer to BSD 9.1 and check the Magenta Developer Bias voltage. If no voltage is present replace the High Voltage Power Supply. If the voltage is OK check the Magenta Developer Bias lead CN803-3 for an open. If the wiring is OK, refer to BSD 9.10 and check the Magenta Toner Solenoid CN115-14 for a short to ground. If no short is present, replace the color developer module.
6. BACKGROUND (YELLOW).	1. Overtoning	1. Refer to ADJ 9.1 step 11 and complete the procedure if required.
	2. No Yellow bias or constant Yellow Toner Dispensing.	2. Refer to BSD 9.1 and check the Yellow Developer Bias voltage. If no voltage is present replace the High Voltage Power Supply. If the voltage is OK check the Yellow Developer Bias lead CN803-5 for an open. If the wiring is OK refer to BSD 9.10 and check the Yellow Toner Solenoid CN115-16 for a short to ground. If no short is present, replace the color developer module.

Defect Name / Description	Possible Causes	Corrective Action
7. BLACK PRINT (NO IMAGE IS PRESENT, THE PAGE IS BLACK).	1. Drum Module not seated.	1. Reseat the Drum Module.
	2. Print Drum module arcing. The print may be a combination of all colors.	2. Listen for arcing and watch message display for scrambled characters. If present replace the Print Drum module.
	3. ESS holding laser on.	3. Slide ESS out of printer. Run IOT Test pattern. If OK, replace ESS. If prints are still black, reinstall ESS and continue with this procedure.
	4. No power to Charge Scorotron.	4. Check the wiring between the High voltage Power Supply and the Charge Spring Clip to ensure a good connection.
	5. No Charge on signal.	5. Refer to Section 7, BSD 9.1 and check the Charge on Signal (CN106-2) for an open. If signal does not go low during print, replace the PCU PWB.
	6. Broken Charge Scorotron.	6. Replace the Print Drum Module.
	7. High voltage Power Supply defective.	7. Replace the High Voltage Power Supply.
	8. Constant Black Data being sent to ROS.	8. Refer to Section 7, BSD 6 and check the VIDEO DATA line (CN113-8) for a short to ground.
	9. Constant Black Data being sent to PCU PWB.	9. Refer to Section 7, BSD 6 and check the DATA line (CN104-11) for a short to ground.
	10. PCU PWB or ESS PWB defective.	10. Replace PCU PWB. If problem still exists, replace the ESS PWB.
	11. Laser beam is always on.	11. Replace the ROS.

Defect Name / Description	Possible Causes	Corrective Action
8. BLANK PRINT (NO IMAGE IS PRESENT, THE ENTIRE PRINT IS WHITE).	1. No Developer Drive	1. Developer Drive Belts broken. Repair or replace. Drive System not camming in when the ROS is closed. Check for binding or mechanical interference.
	2. ESS or ESS components not seated.	2. Slide ESS out of printer. Run IOT Test pattern. If OK, reseat all plug in components on the ESS reinstall ESS and recheck. If prints are blank with ESS removed, continue with this procedure.
	3. Constant Magnetic Roll cleaning.	3. Refer to Section 7, BSD 9.6 and check the Magnetic Roll Cleaner Solenoid for an open. If the On signal (CN115-10) does not go low during print, replace the PCU PWB.
	4. No Horizontal Sync from IOT (continuous blank prints when printing).	4. Refer to Section 7, BSD 6 and check the HSYNC signal line (CN104-9) for an open.
	5. No Vertical Sync from IOT (continuous blank prints when printing).	5. Refer to Section 7, BSD 6 and check the VSYNC signal line (CN104-10) for an open.
	6. No Data signals from ESS.	6. Refer to Section 7, BSD 6 and check the DATA signal line (CN104-11) for an open.
	7. PCU PWB defective.	7. Replace PCU PWB.
9. BLANK PRINT (BLACK).	1. No Black Developer Clutch (No Black development).	1. Refer to Section 7, BSD 9.7 and check the Black Developer Clutch for an open. If the ON signal (CN115-2) does not go low during print, replace the PCU PWB.
	2. Constant Black Magnetic Roll cleaning.	2. Cleaning Cam timing incorrect, refer to the Magnetic Roller Cleaning Cams adjustment (ADJ 6.1) and perform the check.

Defect Name / Description	Possible Causes	Corrective Action
10. BLANK PRINT (CYAN).	1. No Cyan Developer Clutch (No Cyan development).	1. Refer to BSD 9.9 and check the Cyan Developer Clutch for an open. If the ON signal (CN115-4) does not go low during print, replace the PCU PWB.
	2. Constant Cyan Magnetic Roll cleaning.	2. Cleaning Cam timing incorrect, refer to the Magnetic Roller Cleaning Cams adjustment (ADJ 6.1) and perform the check.
11. BLANK PRINT (MAGENTA).	1. No Magenta Developer Clutch (No Magenta development).	1. Refer to BSD 9.9 and check the Magenta Developer Clutch for an open. If the ON signal (CN115-6) does not go low during print, replace the PCU PWB.
	2. Constant Magenta Magnetic Roll cleaning.	2. Cleaning Cam timing incorrect, refer to the Magnetic Roller Cleaning Cams adjustment (ADJ 6.1) and perform the check.
12. BLANK PRINT (YELLOW).	1. No Yellow Developer Clutch (No Yellow development).	1. Refer to BSD 9.9 and check the Yellow Developer Clutch for an open. If the ON signal (CN115-8) does not go low during print, replace the PCU PWB.
	2. Constant Yellow Magnetic Roll cleaning.	2. Cleaning Cam timing incorrect, refer to the Magnetic Roller Cleaning Cams adjustment (ADJ 6.1) and perform the check.
13. COLOR HALO **Most Often A Yellow Halo**	1. Very Dry Paper.	1. Replace paper.
	2. New Developer Module just installed.	2. Perform the Density and Color Balance Adjustment. (ADJ. 3.1). Run 300 prints to “break in” the new developer housing. Enter Special diagnostics, scroll to ID Level, set offending color to 80.

<table>
<tr><th>Defect Name / Description</th><th>Possible Causes</th><th>Corrective Action</th></tr>
<tr><td rowspan="7">14. DARK DENSITY (ALL COLORS).</td><td>1. Color Balance out of adjustment.</td><td>1. Perform the Density and Color Balance Adjustment. (ADJ. 3.1).</td></tr>
<tr><td>2. Developer near end of life.</td><td>2. Check % remaining (from the Menus). Replace as required.</td></tr>
<tr><td>3. Print Drum Module failure.</td><td>3. Replace the Print Drum Module.</td></tr>
<tr><td>4. Print Drum Arcing.</td><td>4. Refer to OF8 Arcing RAP in Section 2.</td></tr>
<tr><td>5. New developer assembly did not initialize.</td><td>5. Run a Diagnostic Sheet and check the Toner Concentration Setpoints for newly installed developer assembly. If the Setpoints are at 70 (default), replace the developer assembly.</td></tr>
<tr><td>6. No charge.</td><td>6. Refer to BSD 9.4 and check the RED leads to the Print Drum Module for an open.</td></tr>
<tr><td>7. Temperature/RH Sensor failure.</td><td>7. If the readings on the diagnostic sheet are out of range (RH=0 or RH > 100, or Temp=0), refer to the chart below:
<table>
<tr><th>Diag. Sheet</th><th>Refer to BSD 9.19 and check:</th></tr>
<tr><td>RH=0</td><td>CN105-1, Humidity Sense, for a short to ground.</td></tr>
<tr><td>RH > 100</td><td>CN105-1, Humidity Sense, for an open.
CN105-2, Humidity Sense, GND for an open.</td></tr>
<tr><td>Temp=0</td><td>CN105-5, Temp. Sense, for an open or short to ground.</td></tr>
</table>
If the wiring checks OK, replace the Temperature/Humidity Sensor.</td></tr>
</table>

Defect Name / Description	Possible Causes	Corrective Action
15. DARK DENSITY (SINGLE COLOR).	1. Color Balance out of adjustment.	1. Perform the Density and Color Balance Adjustment. (ADJ. 3.1).
	2. Print Drum Module failure.	2. Replace the Print Drum Module.
	3. Developer Module failure.	3. Replace the Developer Module.
	4. No Black toner regulation.	4. Refer to BSD 9.7 and check the Black Toner GND CN107-2 for an open.
16. DARK LINES OR STREAKS, LEAD EDGE TO TRAIL EDGE.	1. Dirty Charge Scorotron.	1. Clean the Charge Scorotron.
	2. Charge Scorotron Cleaner out of position.	2. Position Cleaner to extreme left.
	3. Scratched Print Drum.	3. Replace the Print Drum Module.
	4. Grounding Roller always raised.	4. Check the Grounding Roller for binding. If OK, refer to BSD 8.3 and check the Grounding Roller Solenoid On Signal CN101-6 for a short to ground.
	5. Foreign particles under the Print Drum Cleaning Blade.	5. Remove the Cleaning Blade (3 screws) and clean the blade. Reinstall and make several prints to verify cleaning. If problem still exists, replace the Print Drum Module.
	6. Low Oil or Fuser Wiper Roll failure.	6. If Oil is low, refer to the W5 RAP and check the operation of the Oil Sensor. Add Oil or replace the Fuser Wiper Roll.
	7. Developer being pulled from housing by high charge.	7. Charge Scorotron contaminated by fuser oil. Check fuser for leaks. Replace Print Drum Module. Replace Fuser if required.
	8. Stripper Finger marks.	8. If marks line up with Stripper fingers, clean Stripper Fingers, replace paper.
	9. Oil Leakage.	9. Replace all oil contaminated parts. Clean as required, pay special attention to the Transfer Drum Cleaning Brush. Oil on the brush will re-contaminate the Print Drum.

Defect Name / Description	Possible Causes	Corrective Action
17. DARK SPOTS.	1. Print Drum Module defective.	1. Replace the Print Drum Module.
	2. Toner falling from the developer housings.	2. Clean Toner from the developer housings.
	3. Poor developer mixing.	3. Replace the Developer Module.
	4. Oil Spots on Print Drum.	4. Check for Oil leaks. Replace Print Drum Module.
18. DELETIONS (COMET). Small white deletions app. 1mm wide X 1-5mm long.	1. High Volume operation (more that 500 prints per day.	1. Switch on Cleaning Cycles. Refer to GP 3.4
19. DELETIONS (HOLLOW CHARACTERS).	1. Transfer Drum Nip too large.	1. Perform Transfer Drum Nip Adjustment (ADJ 11.1)
20. DIRT, TONER, OR CONTAMINATION ON THE REVERSE SIDE OF THE PRINT (IT MAY BE REPEATING).	1. Toner in the paper path.	1. Clean the paper path.
	2. Dirty Fuser Pressure Roll, repeats every 3.66 inches.	2. Replace the Fuser Module.
	3. Transfer Drum Cleaning failure.	3. Replace the Transfer Drum Cleaning Blade and Brush.
	4. Dirty Printer (Sump Full).	4. Refer to BSD 9.21 and check the Waste Toner Full signal, CN102-3, for a short to ground.
	5. High volume Printer.	5. Increase the cleaning cycles. Refer to GP 3.4 in Section 6

Defect Name / Description	Possible Causes	Corrective Action
21. FUZZY IMAGE.	1. Bias is incorrect (Trail edge of color is light).	1. Refer to BSD 9.1 and check the Bias control signal, between CN106-6, and CN802-1 for an open.
	2. Developer failure.	2. Replace the Color Developer Module.
	3. ESS Failure.	3. Replace the ESS.
22. LIGHT DENSITY IN A SINGLE COLOR.	1. Color Balance out of adjustment.	1. Perform the Density and Color Balance Adjustment. (ADJ. 3.1).
	2. Developer Module flow blockage.	2. Replace the Developer Module.
	3. Printer not level.	3. Level printer.
	4. Developer Module defective or at end of life.	4. Replace the Developer Module.
	5. No Black Developer Bias (Black only is light).	5. Refer to BSD 9.1 and check the Black Developer Bias lead for a short to ground.
	6. Transfer to Print Drum Nip incorrect.	6. Refer to The Transfer Drum Nip adjustment (ADJ 11.1) and perform the check.
	7. Bias Control Signal (Black only is light)	7. Refer to BSD 9.1 and check the Bias Control Signal CN106-6 for an open or short to ground.
23. LIGHT DENSITY ALL COLORS.	1. Developer seals still in place.	1. Remove shipping material from developer assemblies.
	2. Poor Transfer.	2. Check contact between right transfer drum bearing and Transfer contact on frame. Check Transfer Drum Nip. ADJ 11.
	3. Print Drum Arcing.	3. Refer to OF8 Arcing RAP in Section 2.
	4. Printer not level.	4. Level printer.
	5. Weak Laser Diode output.	5. Replace ROS assembly.

Defect Name / Description	Possible Causes	Corrective Action
24. LIGHT LINES/DELETIONS LEAD TO TRAIL EDGE.	1. Dirty Charge Scorotron.	1. Clean the Charge Scorotron.
	2. Foreign material between ROS and Print Drum (defect is present in all colors).	2. Clean the ROS to Print Drum path using a lint free cloth.
	3. Print Drum scratched.	3. Replace the Print Drum Module.
	4. Transfer Drum to Print Drum Nip to small.	4. Perform the Transfer Drum Nip check (ADJ 11.1).
	5. Foreign material scraping the paper on the Transfer Drum, for example paper from a previous jam.	5. Check for foreign material.
	6. Foreign material in Developer Housing.	6. Replace the Developer Module.
	7. Stripper Finger Marks.	7. If marks line up with Stripper fingers, clean Stripper Fingers, replace paper.
	8. Oil Spill. (Printer tipped or moved)	8. Remove fuser and check for oil leakage. If oil has leaked, check the following areas: • Transfer Drum Cleaner • Print Drum • Black Developer Housing • Color Developer Housing • Fuser • Paper Feed Assembly Replace any contaminated components.
25. MISREGISTRATION (BLACK).	1. Fuser Speed incorrect (V66 IOT Firmware).	1. Perform Fuser Speed check. (GP. 3.1)
	2. Transfer Drum to Print Drum Nip to large.	2. Perform the Transfer Drum Nip check (ADJ 11.1).
26. MISREGISTRATION (YELLOW).	1. Fuser Speed incorrect (V66 IOT Firmware).	1. Perform Fuser Speed check. (GP. 3.1)
	2. Transfer Drum to Print Drum Nip to large.	2. Perform the Transfer Drum Nip check (ADJ 11.1).

Defect Name / Description	Possible Causes	Corrective Action
27. MISREGISTRATION (SIDE TO SIDE).	1. Registration adjustment incorrect	1. Perform Margins adjustment. (ADJ. 3.2)
	2. Constant HSYNC from IOT.	2. Refer to BSD 6 and check the HSYNC signal CN104-9 for a short to ground.
28. MISREGISTRATION (LEAD TO TRAIL EDGE).	1. Registration adjustment incorrect.	1. Perform Margins adjustment. (ADJ. 3.2)
	2. Registration clutch always energized.	2. Refer to BSD 8.2 and check the Registration Clutch CN101-4 for a short to ground.
	3. Transfer to Print drum gear mesh incorrect.	3. If prints are OK when using enhanced alignment, refer to Transfer Drum Nip adjustment (ADJ 11.1) and perform the check.
29. MISREGISTRATION HEAVIER STOCK (LEAD TO TRAIL EDGE).	1. Grounding roller not being raised.	1. Refer to BSD 8.3 and check the Grounding Roller Solenoid circuit for an open.
30. MULTISHEET FEED.	1. Paper is less than 20 lb.	1. Use heavier paper from 20 to 24 lb.
	2. Paper not installed correctly or in poor condition.	2. Check the following: • Fan the paper. • Change the paper. • Turn the paper over in the cassette. • Snubber alignment.
31. OIL SPOTS. These may appear as background or black spots on the print.	1. Fuser leaks.	1. Check for any spills from bottle replacement. If OK, check for fuser oil leaks. Replace the Fuser if required.

Defect Name / Description	Possible Causes	Corrective Action
32. REPEATING PRINT DEFECTS EVERY 220 MM (8.66").	1. Defective/damaged Print Drum.	1. Clean the Print drum with film remover. Be sure to let the drum dry before rotating it. If the defect persists, replace the Print Drum Module.
33. REPEATING PRINT DEFECTS EVERY 93 MM (3.66").	1. Out of Oil.	1. If Oil is low, refer to the W5 RAP and check the operation of the Oil Sensor. Add Oil. Run 20 blank prints to clean the fuser roll.
	2. Damaged Fuser Roll.	2. Replace the Fuser Module.
34. REPEATING PRINT DEFECTS EVERY 63.5 MM (2.5").	1. Grounding Roller always raised.	1. Check the Grounding Roller for binding. If OK, refer to BSD 8.3 and check the Grounding Roller Solenoid On Signal CN101-6 for a short to ground.
35. PRINT DEFECT 63.5 MM (2.5") FROM LEAD EDGE OF PRINT.	1. Poor Transfer	1. Check the following: • Check contact between right transfer drum bearing and Transfer contact on frame. • Check Transfer Drum Nip. ADJ 11.1 in Section 2. • Paper out of specification. Use 20 to 24 lb. paper.

Defect Name / Description	Possible Causes	Corrective Action
36. RESIDUAL IMAGE.	1. Failed Print Drum Cleaning Blade.	1. Remove the Cleaning Blade (3 screws) and clean the blade. Reinstall and make several prints to verify cleaning. If problem still exists, replace the Print Drum Module.
	2. Low Fuser Oil.	2. If Oil is low refer to the W5 RAP and check the operation of the Fuser Oil Sensor. Add Oil. Run 20 blank prints to clean the fuser roll.
37. SMEARS (BLACK).	1. Fuser Speed incorrect (V66 IOT Firmware).	1. Perform Fuser Speed check. (GP. 3.1)
38. SMEARS (YELLOW).	1. Fuser Speed incorrect (V66 IOT Firmware).	1. Perform Fuser Speed check. (GP. 3.1)
39. SMEARS SIDE TO SIDE ON PORTRAIT PRINT.	1. Light shocked Print Drum	1. Dark rest the Print Drum. Replace the Print Drum
	2. Main drive belt slipping.	2. Replace the main drive belt.
40. SMEARS RANDOM. (BLACK PRINTS OK).	1. Image being disturbed during transfer.	1. Foreign material in Transfer Drum Cleaning Brush or in Transfer Drum Lower Frame.

Defect Name / Description	Possible Causes	Corrective Action
41. TRANSPARENCY PROBLEMS.	1. Jamming, mottle type deletions, Oil offsetting.	1. Adjust Transparency Mode (GP 3.3)
	2. Hollow characters.	2. Try Printing on other side of Transparency. Adjust Transfer Drum Nip (ADJ 11.1) Try different transparency material.
	3. Low density/Deletions.	3. Adjust Transfer Drum Nip (ADJ 11.1)
	4. Oily Transparencies	4. Try (GP 3.3). Interleaf transparencies and paper after printing. Paper will absorb the oil.
42. WRINKLED PAPER.	1. Paper is less than 16 lb.	1. Use heavier paper from 20 to 24 lb.
	2. Feed rolls/drive rolls dirty.	2. Clean the feed rolls and drive rolls.
	3. Paper not installed correctly or in poor condition.	3. Check the following • Fan the paper. • Change the paper. • Turn the paper over in the cassette.
	4. Transfer Drum to Print Drum nip incorrect (uneven side-to-side).	4. Perform the Transfer Drum Nip adjustment (ADJ 11.1).
	5. Paper feed problem (wrinkle occurs before transfer, observe print on transfer drum).	5. Check the following: Replace paper feed assembly if required: • Tabs broke on large springs loading the lower registration roller. • Defective lower registration roller.
	6. Fuser Module failure (wrinkle occurs after transfer, observe print on transfer drum).	6. Replace Fuser Module.
	7. Exit roller skewed. (wrinkle occurs after fusing).	7. Check for broken or missing bearings. Replace output shaft if required.

<table>
<tr><th>Defect Name / Description</th><th>Possible Causes</th><th>Corrective Action</th></tr>
<tr><td rowspan="3">43. WRONG COLORS (ON ESS TEST PATTERNS).</td><td>1. Color Balance out of adjustment.</td><td>1. Perform the Density and Color Balance Adjustment. (ADJ. 3.1).</td></tr>
<tr><td>2. Developer Contamination.</td><td>2. Replace the Developer Module.</td></tr>
<tr><td>3. One of the Magnetic Roll Clutches is always energized.</td><td>3. Observe the colors on Test Pattern A. If only one basic color (K, C, M, Y) is correct, that clutch may always be energized. Refer to the table below to troubleshoot.
<table>
<tr><th>Correct Color</th><th>Refer to BSD and check:</th></tr>
<tr><td>Black</td><td>BSD 9.7 CN115-2, Black Magnetic Clutch on, for a short to ground.
BSD 9.1 CN106-13, K Bias On, for a short to ground.</td></tr>
<tr><td>Cyan</td><td>BSD 9.9 CN115-4, Cyan Magnetic Clutch on, for a short to ground.
BSD 9.1 CN106-12, C Bias On, for a short to ground</td></tr>
<tr><td>Magenta</td><td>BSD 9.9 CN115-6, Magenta Magnetic Clutch on, for a short to ground.
BSD 9.1 CN106-11, M Bias On, for a short to ground.</td></tr>
<tr><td>Yellow</td><td>BSD 9.9 CN115-8, Yellow Magnetic Clutch on, for a short to ground.
BSD 9.1 CN106-10, Y Bias On, for a short to ground</td></tr>
</table></td></tr>
</table>

TEST PATTERNS

This section contains descriptions of the ESS and IOT generated test patterns.

ESS GENERATED TEST PATTERNS.

The ESS contains several internally generated test patterns to assist in diagnosing image quality problems. These test patterns are accessed using the Off Line Diagnostics Menu. A description of the internal test patterns is provided below.

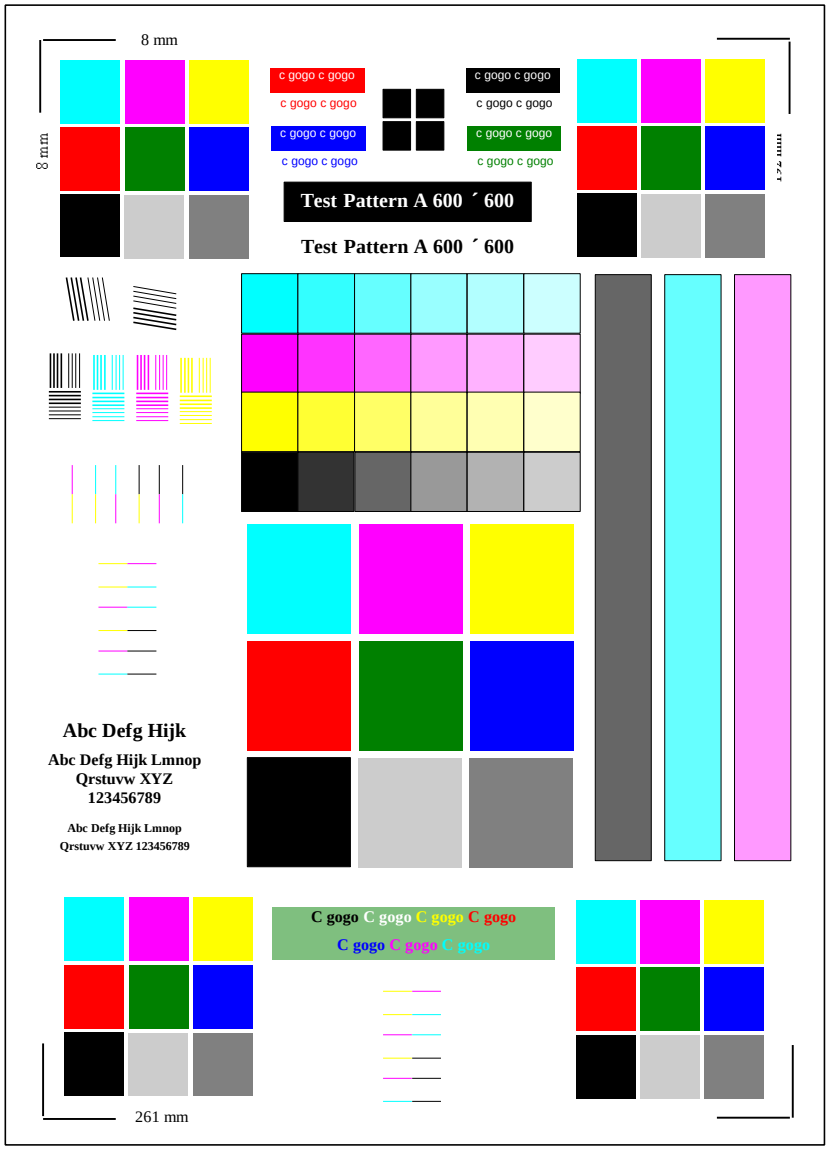
PQ SET

The Print Quality Set (PQ Set) consists of three test patterns and are printed in sequence. They are:

- Test Pattern A
- The Density and Color Balance Test Pattern
- Diagnostic Test Pattern.

Test Pattern A.

This pattern produces an image of varying densities and colors, and assists the user in identifying a variety of image quality defects, including; mottle, streaks, density problems, deletions, and banding. These types of defects are referred to as cosmetic defects.



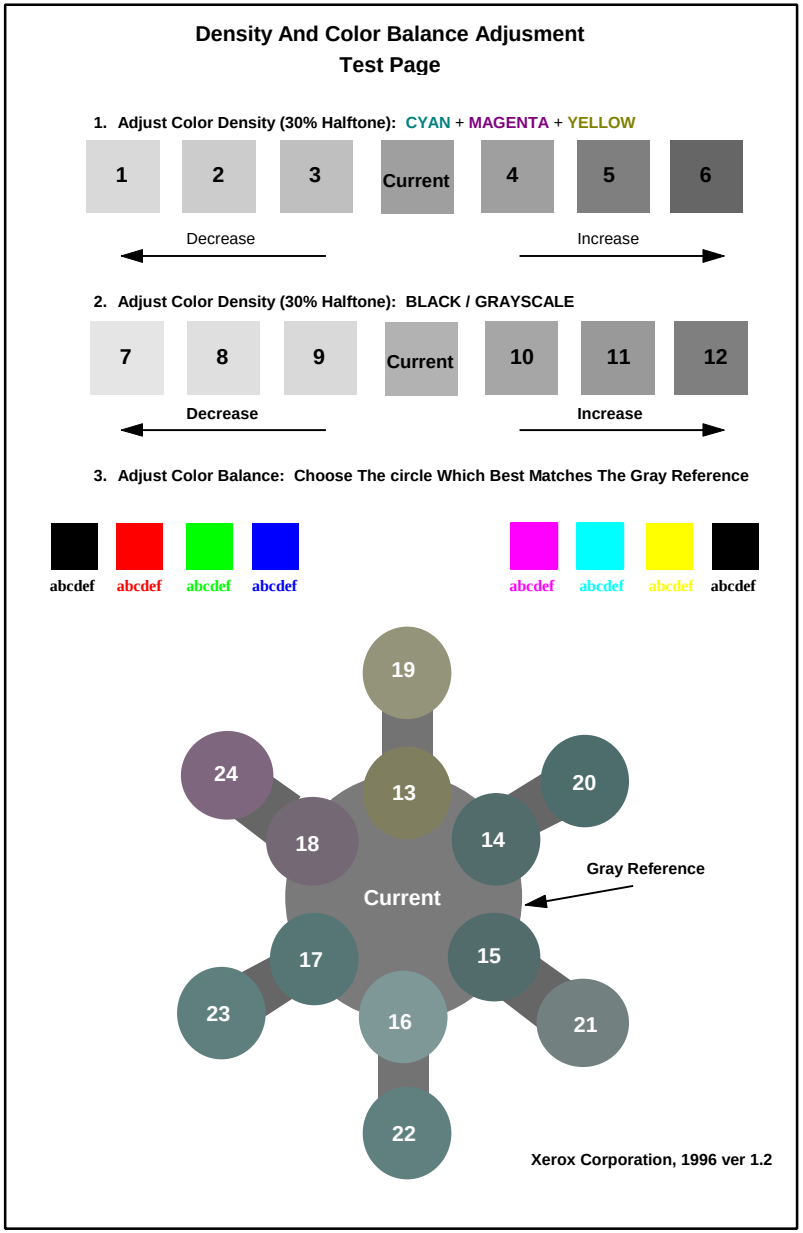
NOTES:

Density and Color Balance Test Pattern.

This test pattern is used to set the density and to determine if the printer color is balanced properly. It will allow the customer to judge the color balance, and correct the color balance if necessary. Refer to ADJ. 3.1 Density and Color Balance Procedure in Section 4 for additional information.

NOTE: It is often difficult to see changes in the color balance. You can check the change by running a printer diagnostic sheet before and after the adjustment. Changes will show in the values under ***Density Rate Setpoints and Developer Bias****. The NC60 includes these values on the Density and Color Balance Test Pattern.*

On the NC60 only, you must disconnect all input ports from the ESS before performing this adjustment.



Diagnostic Test Pattern. (C55/C55mp)

This test pattern can be used by the Help Center to determine the status of some of the machine parameters.

Process Control Status:

If Black, Cyan, Magenta, or Yellow, indicate:

Under Limit Error - Process controls thinks the prints are too light even at the highest bias.

Over Limit Error - Process controls thinks the prints are too dark even at the lowest bias.

Irregular Error - The Gamma Sensor did not see the expected difference between the 3 patches during setup.

Possible causes for **Under Limit** and **Irregular** errors tend to be the same:

- Transfer Nip too small, or poor transfer in general.
- Toner concentration in the developer assembly is too low. Arcing may be causing excessive toner consumption.
- Very low Relative Humidity. Magenta is especially sensitive to this problem. The error occurs if Relative Humidity is less than 10 counts (General information on Diagnostic sheet).
- Developer assembly problem.
- High Voltage Power supply problem.

Possible causes for **Over Limit** errors:

- Very high Relative Humidity. The error occurs if Relative Humidity is greater than 35 counts (General information on Diagnostic sheet).
- Dirty white patch on transfer drum.

The toner concentration in the developer assembly is too high.

Calibration Errors occur when reading the white patch, and the difference between full Gamma voltage and half Gamma voltage is not what was expected. Suspect a dirty white patch or bad Gamma Sensor.

Density Rate Setpoints:

The default is 90, If the Density and Color Balance has been adjusted, these setpoints will change. The range is between 80 and 100. If the Density and Color Balance tries to exceed a limit, the process control will indicate an over or under error. One count is approximately 10 Volts of developer bias

Toner Concentration:

Setpoint - The default is 70. When a new developer assembly is installed, the toner concentration sensor “reads” the new housing and the setpoints are entered in NVM. These setpoints are critical for proper copy quality and must be re-entered if the PCU PWB is replaced or the NVM is initialized. If the NVM is accidentally initialized, the setpoints can be obtained from the Diagnostic sheet and re-entered into NVM.

Control Point - This is the value that the toner concentration sensor in the developer assembly tries to maintain. The control point uses the setpoint as a starting point and then varies depending on the temperature and relative humidity. In high humidity conditions, the value is increased and in low humidity conditions, the value is decreased.

The Black value varies between –20 to +27.
The Color value varies between –28 to +22

Value - The values are measured by the toner concentration sensors during the print cycle and determine when toner needs to be added to the developer assembly. The value usually does not equal the control point exactly, but is generally within 5 counts.

Process Voltage:

Transfer Bias - This is the voltage applied to the transfer drum.

The Paper default is 1305V and varies depending on the temperature and relative humidity. In high humidity conditions, the value is decreased and in low humidity conditions, the value is increased.

The Paper bias varies between 1200-1400V.

The Transparency default is 2000V and varies depending on the temperature and relative humidity. The voltage varies for each of the 4 colors when running transparencies.

Black default is 2000V
Cyan default is 2200V
Magenta default is 1400
Yellow default is 2600

As the humidity changes the voltage is also changed to compensate.

Developer Bias - The default bias is 400V. The four developer bias voltages are set during the Process Control cycle at power on. The voltage range is from -250 to -550 volts. In general, the higher the bias the darker the print. If the values get too high or too low, the charge voltage may change to compensate. The Magenta voltage tends to be higher. These values will also change when the color balance procedure is performed.

General Information:

Software Version: X.X.X - Current ESS Software version.

Software Part Number: XXXXXXXXX ESS PWB part number.

Engine Software Version: XX - current IOT Software version.

Serial Number XXX-XXXXXX - Printer Serial Number.

Total RAM Installed : 24 MB - Total Ram installed in Printer.

Base: 8 MB - Soldered on the ESS PWB always 8M.

J8/J9 16 MB - This is the DRAM in the upper two slots. They must be matched and must be the larger of the SIMM's

J10/J11 0 MB - This is the DRAM in the lower two slots.

Binary/Contone Lossy Counters - The C55 printer uses compression and decompression to save memory. However, if the job is very complex, lossy compression may be used. The printer will still try to print the job however data may be lost. If this occurs, the Lossy Counters will increment. Add more memory to fix this problem.

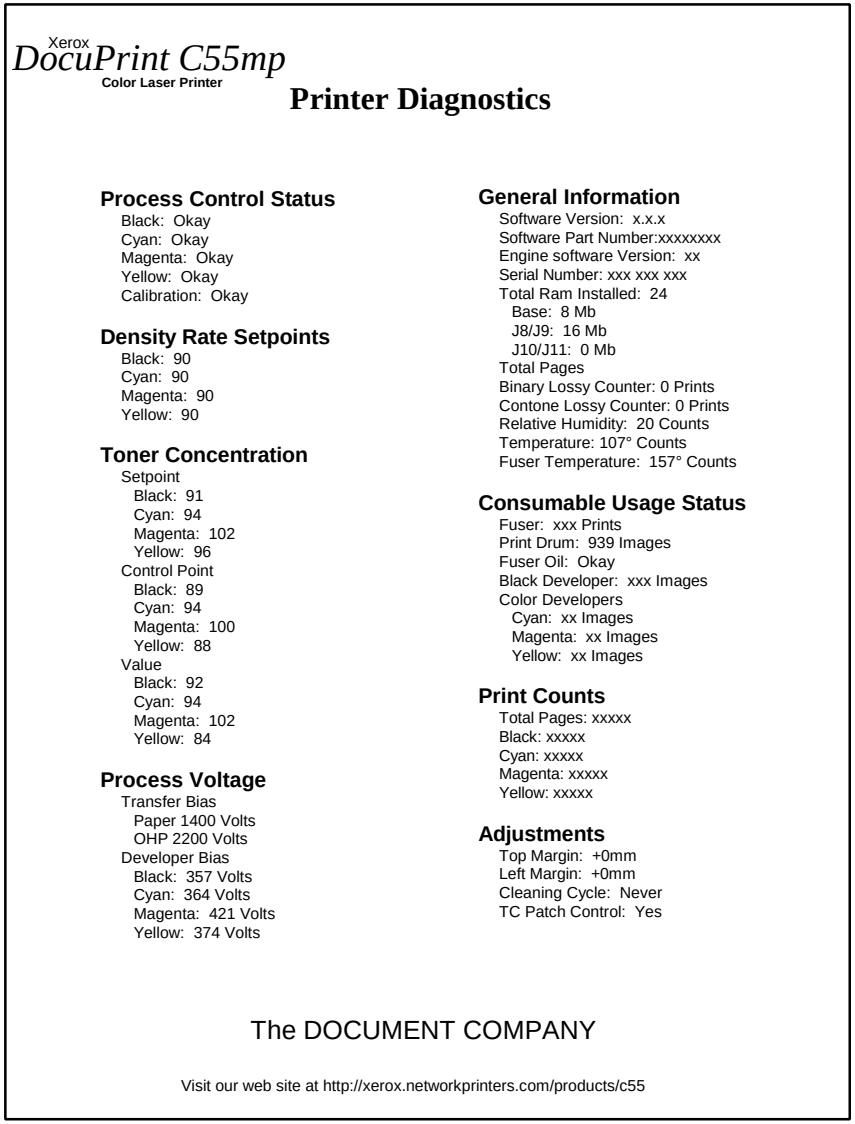
Humidity/Temperature counts - These readings are used to adjust the copy quality to the environment. If these readings are extreme (0 or 255) the Temperature/Humidity sensor is not working properly.

Fuser Temp: - This count represents fuser temperature. The following values are normal:

Transparencies	160
Warm-up	150
Paper	140

Consumables Usage - These readings track the prints and images used by the various consumables. These readings will be reset to zero when a new consumable is installed.

Adjustments - These readings are stored in the ESS. If the ESS is replaced, these values will need to be re-entered.



Xerox *DocuPrint C55mp*
Color Laser Printer

Printer Diagnostics

Process Control Status
Black: Okay
Cyan: Okay
Magenta: Okay
Yellow: Okay
Calibration: Okay

Density Rate Setpoints
Black: 90
Cyan: 90
Magenta: 90
Yellow: 90

Toner Concentration
Setpoint
Black: 91
Cyan: 94
Magenta: 102
Yellow: 96
Control Point
Black: 89
Cyan: 94
Magenta: 100
Yellow: 88
Value
Black: 92
Cyan: 94
Magenta: 102
Yellow: 84

Process Voltage
Transfer Bias
Paper 1400 Volts
OHP 2200 Volts
Developer Bias
Black: 357 Volts
Cyan: 364 Volts
Magenta: 421 Volts
Yellow: 374 Volts

General Information
Software Version: x.x.x
Software Part Number:xxxxxxxx
Engine software Version: xx
Serial Number: xxx xxx xxx
Total Ram Installed: 24
Base: 8 Mb
J8/J9: 16 Mb
J10/J11: 0 Mb
Total Pages
Binary Lossy Counter: 0 Prints
Contone Lossy Counter: 0 Prints
Relative Humidity: 20 Counts
Temperature: 107° Counts
Fuser Temperature: 157° Counts

Consumable Usage Status
Fuser: xxx Prints
Print Drum: 939 Images
Fuser Oil: Okay
Black Developer: xxx Images
Color Developers
Cyan: xx Images
Magenta: xx Images
Yellow: xx Images

Print Counts
Total Pages: xxxxx
Black: xxxxx
Cyan: xxxxx
Magenta: xxxxx
Yellow: xxxxx

Adjustments
Top Margin: +0mm
Left Margin: +0mm
Cleaning Cycle: Never
TC Patch Control: Yes

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Visit our web site at http://xerox.networkprinters.com/products/c55

Diagnostic Sheet [NC60]

This test pattern can be used by the Help Center to determine the status of some of the machine parameters.

General Information:

Serial Number xxx-xxxxxxx - Printer Serial Number.

Software Version: - Current ESS Software version.

Engine Software Version: - current IOT Software version.

Total Memory Installed : - Total Ram installed in Printer. Max used 128 MB

Binary/Contone Lossy Counters - The NC60 printer uses compression and decompression to save memory. However, if the job is very complex, lossy compression may be used. The printer will still try to print the job however data may be lost. If this occurs, the Lossy Counters will increment. Add more memory to fix this problem.

Humidity/Temperature counts - These readings are used to adjust the copy quality to the environment. If these readings are extreme (0 or 255) the Temperature/Humidity sensor is not working properly.

Fuser Temp: - This count represents fuser temperature. The following values are normal:

Transparencies	160
Warm-up	150
Paper	140

Print Counts

The number of Total, Black, Cyan, Magenta, and Yellow prints made on the NC60.

Consumables Usage Status

These readings track the prints and images used by the various consumables. These readings will be reset to zero when a new consumable is installed.

Adjustments

These readings are stored in the ESS. If the ESS is replaced, these values will need to be re-entered.

Process Control Status:

If Black, Cyan, Magenta, or Yellow, indicate:

Under Limit Error - Process controls thinks the prints are too light even at the highest bias.

Over Limit Error - Process controls thinks the prints are too dark even at the lowest bias.

Irregular Error - The Gamma Sensor did not see the expected difference between the 3 patches during setup.

Possible causes for **Under Limit** and **Irregular** errors tend to be the same:

- Transfer Nip too small, or poor transfer in general.
- Toner concentration in the developer assembly is too low. Arcing may be causing excessive toner consumption.
- Very low Relative Humidity. Magenta is especially sensitive to this problem. The error occurs if Relative Humidity is less than 10 counts (General information on Diagnostic sheet).
- Developer assembly problem.
- High Voltage Power supply problem.

Possible causes for **Over Limit** errors:

- Very high Relative Humidity. The error occurs if Relative Humidity is greater than 35 counts (General information on Diagnostic sheet).
- Dirty white patch on transfer drum.

The toner concentration in the developer assembly is too high.

Calibration Errors occur when reading the white patch, and the difference between full Gamma voltage and half Gamma voltage is not what was expected. Suspect a dirty white patch or bad Gamma Sensor.

Density Rate Setpoints:

The default is 90, If the Density and Color Balance has been adjusted, these setpoints will change. The range is between 80 and 100. If the Density and Color Balance tries to exceed a limit, the process control will indicate an over or under error. One count is approximately 10 Volts of developer bias

Gamma Set Points

These are internal setpoints and are the same for all printers.

Toner Concentration:

Setpoint - The default is 70. When a new developer assembly is installed, the toner concentration sensor “reads” the new housing and the setpoints are entered in NVM. These setpoints are critical for proper copy quality and must be re-entered if the PCU PWB is replaced or the NVM is initialized. If the NVM is accidentally initialized, the setpoints can be obtained from the Diagnostic sheet and re-entered into NVM.

Control Point - This is the value that the toner concentration sensor in the developer assembly tries to maintain. The control point uses the setpoint as a starting point and then varies depending on the temperature and relative humidity. In high humidity conditions, the value is increased and in low humidity conditions, the value is decreased.

The Black value varies between –20 to +27.

The Color value varies between –28 to +22

Value - The values are measured by the toner concentration sensors during the print cycle and determine when toner needs to be added to the developer assembly. The value usually does not equal the control point exactly, but is generally within 5 counts.

Delta - this is the difference between the Control Point and the Value measured. The delta will vary but rarely exceeds 20.

Process Voltage

Transfer Bias - This is the voltage applied to the Transfer Drum.

The Paper default is 1305V and varies depending on the temperature and relative humidity. In high humidity conditions, the value is decreased and in low humidity conditions, the value is increased.

The Paper bias varies between 1000-1200V.

The Transparency default is 2000V and varies depending on the temperature and relative humidity. The voltage varies for each of the 4 colors when running transparencies.

Black default is 2000V

Cyan default is 2200V

Magenta default is 1400

Yellow default is 2600

As the humidity changes the voltage is also changed to compensate.

Developer Bias - The default bias is 400V. The four developer bias voltages are set during the Process Control cycle at power on. The voltage range is from -250 to -550 volts. In general, the higher the bias the darker the print. If the values get too high or too low, the charge voltage may change to compensate. The Magenta voltage tends to be higher. These values will also change when the color balance procedure is performed.

Xerox DocuPrint NC60 Color Laser Printer Diagnostic Sheet

General Information

Serial Number:	xxx-xxxxxx
Software Version:	1.80-39 I NL.ROM
Engine Software Version:	94
Total System Memory:	64
Base:	32 MB
J3	32MB
J4	0 MB
J5	0 MB
J6	0 MB
Binary Lossy Counter:	0
Contone Lossy Counter:	0
Relative Humidity:	20
Temperature:	107
Fuser Temperature:	157

Print Counts

Total	xxxxx
Black	xxxxx
Cyan	xxxxx
Magenta	xxxxx
Yellow	xxxxx

Consumable Usage Status

Fuser:	xxx
Print Drum:	xxx
Fuser Oil:	Okay
Black Developer:	xxx
Color Developers	
Cyan	xx
Magenta	xx
Yellow	xx

Adjustments

Top Margin	0.0
Left Margin	0.0
Cleaning Cycle	Never
TC Patch Control	Off
Fast Black	On
Extra Toner	On
Cyclic toneup	On
OHP Mode	None

Process Control Status

Black	OK
Cyan	OK
Magenta	OK
Yellow	OK
Calibration	OK

Density Rate Set Points

Black	90
Cyan	90
Magenta	90
Yellow	90
Color Balance	Default

Gamma Set Points

Black	41
Cyan	61
Magenta	64
Yellow	62

Toner Concentration

Set Point	
Black	95
Cyan	112
Magenta	110
Yellow	102
Control Point	
Black	103
Cyan	112
Magenta	103
Yellow	102
Value	
Black	103
Cyan	105
Magenta	92
Yellow	103
Delta	
Black	0
Cyan	7
Magenta	11
Yellow	-1

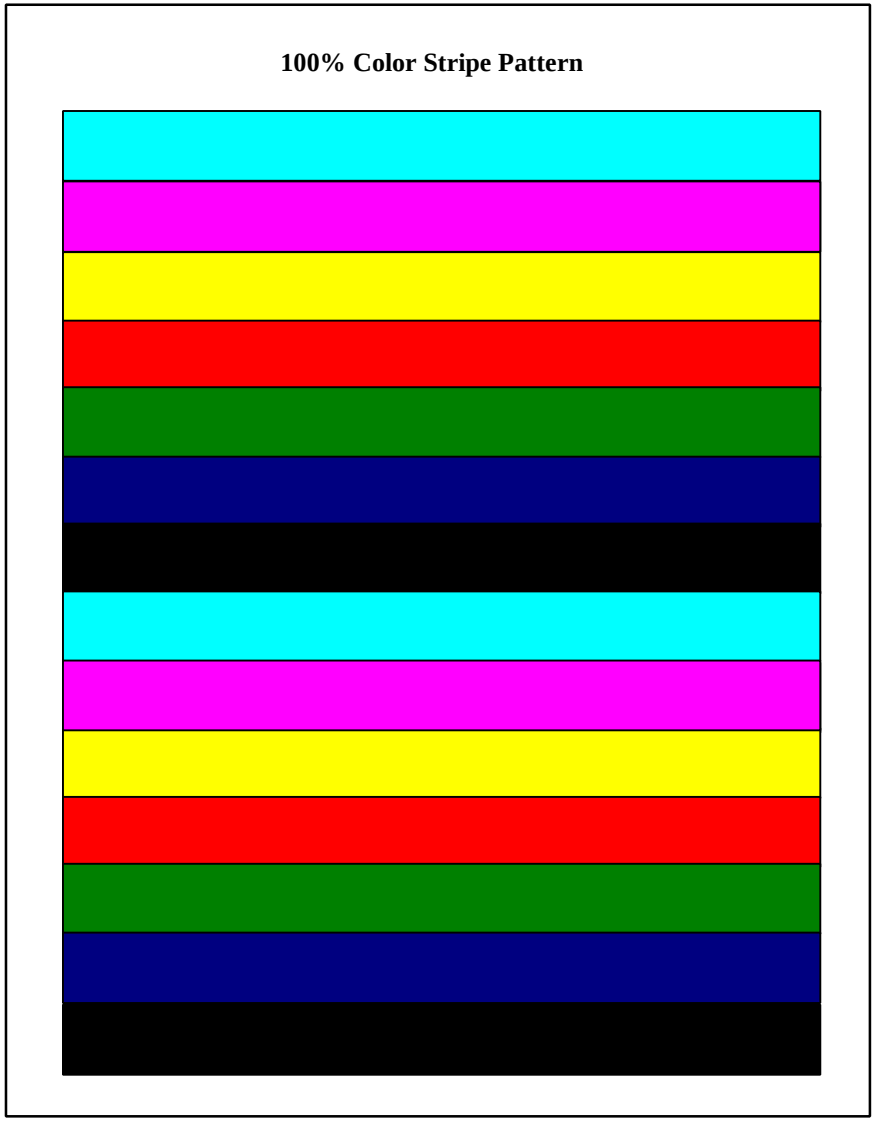
Adjustments

Transfer Bias	
Paper	
High	1000 Volts/105 volts
Normal	1000 Volts/105 volts
Low	1200 Volts/105 volts
OHP	
High	2200 Volts/200 volts
Normal	2000 Volts/200 volts
Low	2200 Volts/105 volts
Developer Bias	
Black	265 Volts
Cyan	345 Volts
Magenta	345 Volts
Yellow	341 Volts

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100% Stripe Test Pattern.

This test pattern consists of a series of horizontal stripes. The pattern includes the basic colors (Cyan, Magenta, Yellow, and Black) and the process colors (Red, Blue, and Green). This test pattern is useful to isolate a problem to one of the basic colors.



Step Test Pattern

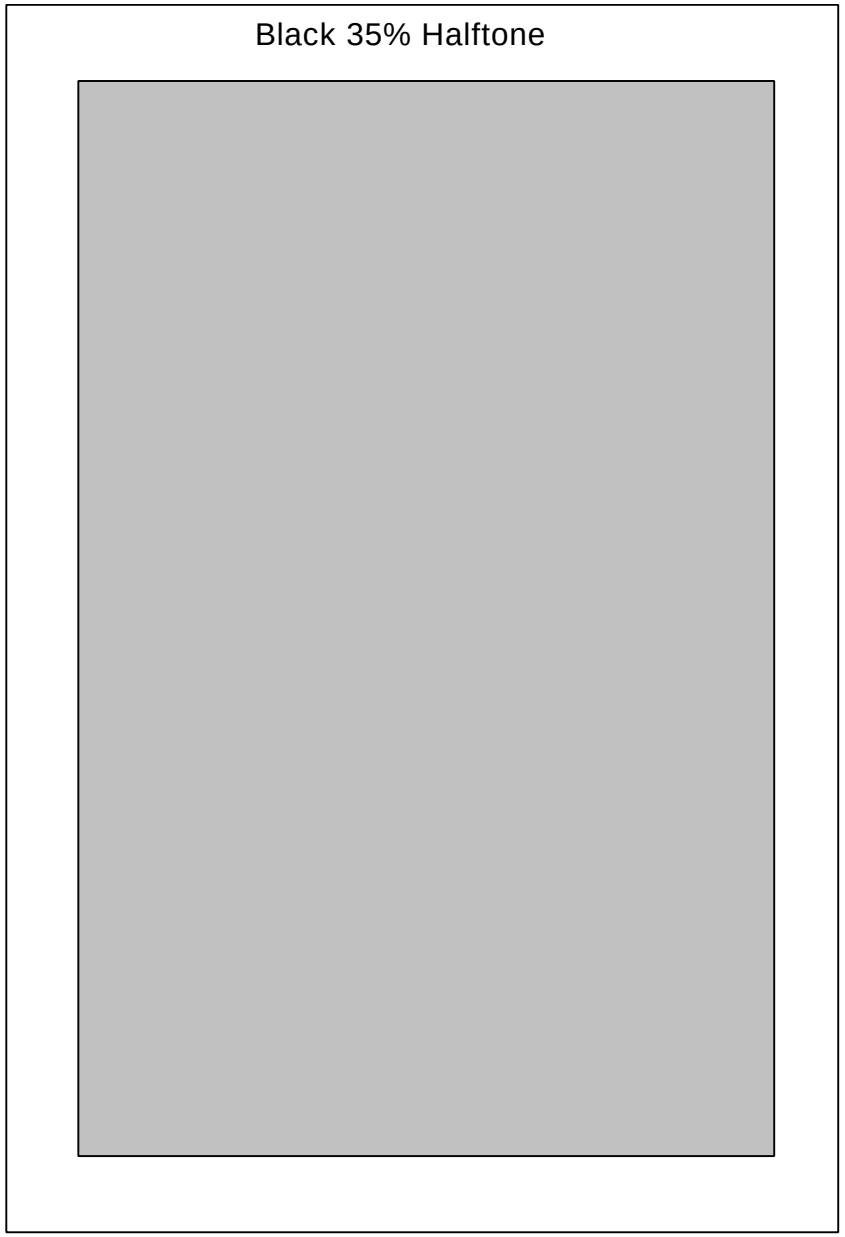
This test pattern consists of a series of steps (changes in image density). The pattern can be run in any of the four basic colors (Cyan, Magenta, Yellow, and Black). This test pattern is useful to isolate a problem to a specific color.

Black Step test Pattern



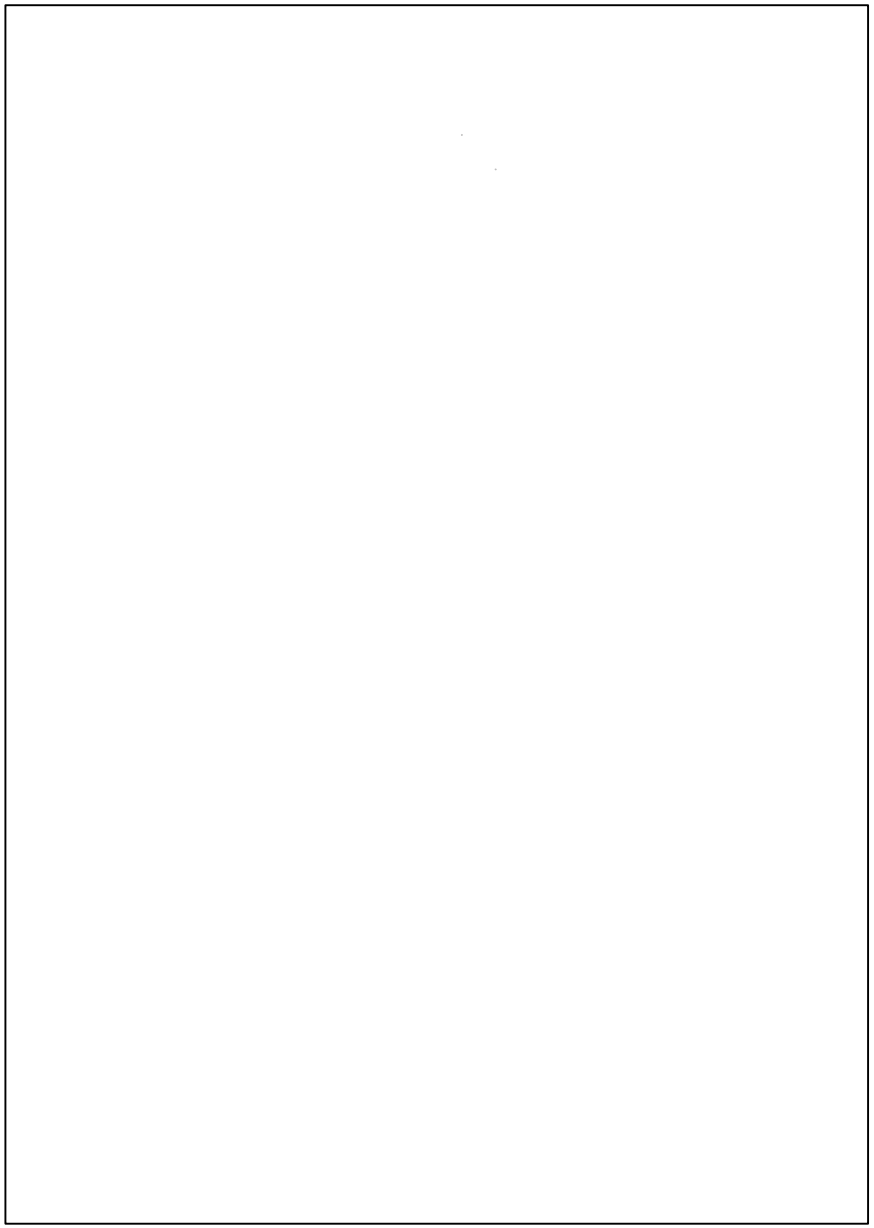
35% Halftone

This test pattern consists of a full page, 35% area coverage, halftone pattern. This pattern are useful in troubleshooting problems in the black developer subsystem.



Blank Print

When selected, each developer housing is switched on a small + indicates which color is running. The remainder of the print is blank. This print can be useful when troubleshooting residual image or offsetting problems.

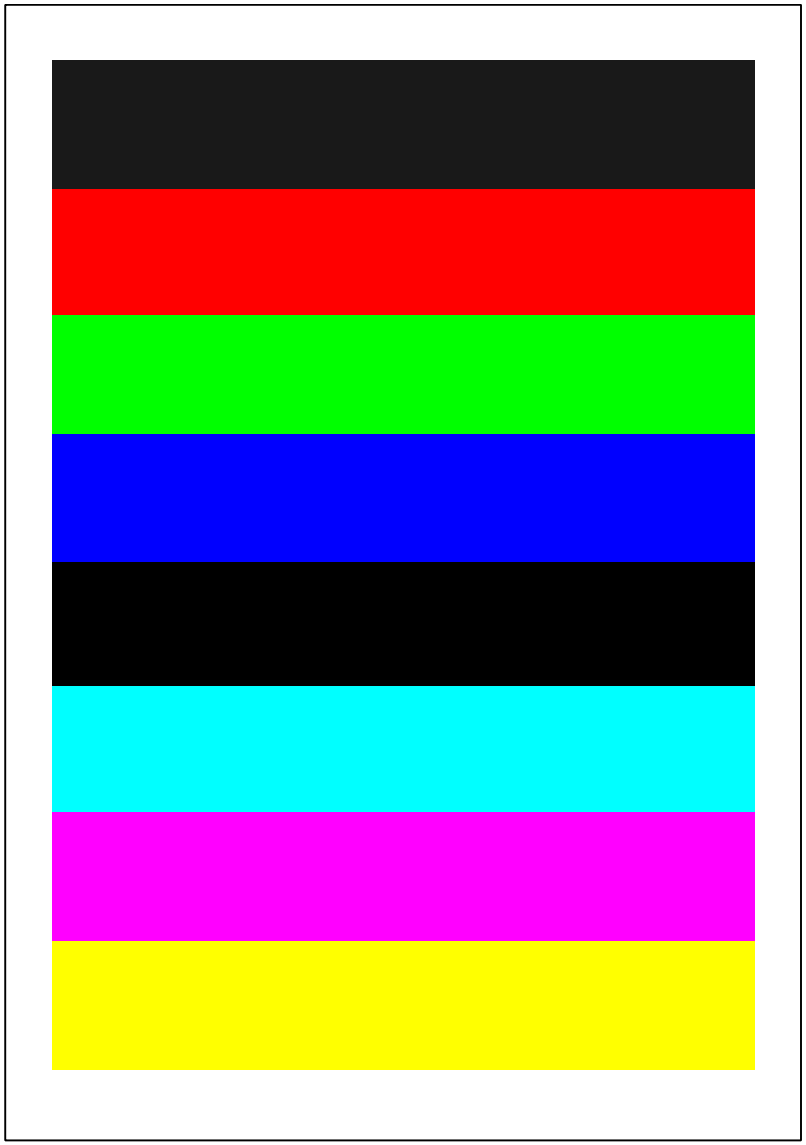


IOT GENERATED TEST PATTERNS.

The IOT contains one internally generated test pattern. It is used to help isolate image quality problems.

If the IOT test pattern prints OK, but test patterns sent from the ESS are bad; the problem must be associated with the ESS.

Anytime the IOT test pattern prints bad the problem is associated with the IOT.



DEFINITIONS

Image Quality Defect Definitions

*NOTE: When referring to a print from this machine, the **front** of the machine is the location where a user of the machine would normally stand to read the control panel. Prints exit from the front to the **rear** and are deposited face down on the top cover. The **lead edge** of the print is the print edge that comes out first.*

Background - Randomly distributed toner particles in the non image areas.

Background can be uniformly distributed over the entire surface of the print or only in localized areas.

The density of the background can vary from barely visible to extremely dark.

Bad text, black, - Text that is fuzzy, broken up, is too wide or "fat", or contains hollow characters.

Bad text, color, - Colored text that has poor color fidelity or text that is fuzzy, broken up, is too wide or "fat", or contains hollow characters.

Bands - Bands are wider than lines. See lines, bands, streaks.

Banding - Repeating bands.

Blank print - a print with no image.

Blurred or fuzzy images - Images that are not clear, appear out of focus, or are broken up. The defect can affect the entire print or parts of the print.

Body deletion - a deletion on the print other than on an edge or a corner.

Color incorrect, bad/poor - colors on the print that are not acceptable reproductions of the desired image.

Color Banding - Repeating color bands. See lines, bands, streaks.

Color Contamination - Impure colors, that is, desired colors that contain toner that is not required. For example yellow that may have some black toner mixed in or red that has some cyan toner or other contaminate.

Color misregistration - color images that are not superimposed and should be.

Colored streaks - a colored strip on the print that differs in color or density from the surrounding area. See lines, bands, streaks.

Debris Centered Deletion, - A deletion, typically in a solid area, that contains a dark spot in the center of the deleted area. See deletion.

Deletion - The absence of toner from a part of the desired image. With multicolored images, the result can be white, light or colored spots, lines, streaks bands or untrue colors on the print. If all toner is absent, the defect is classified as a blank print. See Edge Deletion, Trail Edge Deletion, Debris Centered Deletions, Skips, Body Deletions, Washed Out Image.

Density, high or low -

High - The density of the developed image on the print exceeds the MAX sample on the Density SIR.

Low - The density of the developed image on the print exceeds the MIN sample on the Density SIR.

Edge Deletion, - An area of lighter or zero density (a missing image) at the edge of a desired image. See Deletion.

Fusing, marginal - the fused image be can easily wiped off of the print.

Ghosting - The reproduction of a previous image, usually caused by inadequate erasure of the image on the Drum.

NOTE: This defect, ghosting, is one of three similar image quality problems listed below. Refer to the other defects for additional information.

Ghosting (Drum related).

Offsetting (Fuser related).

Residual Image (Cleaner related).

Graininess - An image defect that causes solid areas to have a sandy looking surface. Graininess is most noticeable in mid density solid areas.

Gray balance incorrect - Grays are produced with a color tint.

Halo, colored (or shadows around text) - A colored ring, shadow, or fringe that appears around text or lines.

Halo, white - A white ring, or fringe that appears around text of lines that are on a colored background.

Hollow Characters - Small circular shaped deletions in image characters. The characters are not completely filled in with toner.

Job to job variability - Image quality variations between prints of the same or similar image from different jobs during the same day. (A job includes all the prints resulting from a single selection of the start print process).

Lead edge to trail edge streaks(s) - A streak is a mark comprised of many small lines of varying length and width giving the appearance of a brush stroke. See lines, bands, streaks.

Light Streaks or Bands - Lower than desired density image areas in the shape of streaks or bands.

Lines, bands, streaks - a strip on the print that differs in color or density from the surrounding area.

A line is typically narrow in width and can be any length.

A band is wider than a line.

A streak is comprised of many small lines of varying length and width giving the appearance of a brush stroke.

Microdarks - Dark spots of any color, easiest seen in non-image areas. The spots are much larger than the toner particle size spots in background.

Misregistered image - See the Image Registration Specification.

Mottle - Small areas of low or light densities within a darker solid area that makes the overall solid area look measled, grainy or sandy. The low density areas are random in shape and size, The size typically is between 0.1MM to 1.0MM. Mottle is most noticeable in high density solid areas.

Offsetting, fuser - The removal of toner from the print by the fuser and the redeposition of that toner on another area of the same print or another print. Removing toner from the image leaves the image rough and without gloss. The redeposited toner may appear as a duplicate image, partially shifted image, or lines and streaks.

NOTE: This defect, fuser offsetting, is one of three similar image quality problems, see list below. Refer to the other defects for additional information.

Ghosting (Drum related).

Offsetting (Fuser related).

Residual Image (Cleaner related).

Oil Marks - Dark round or irregularly shaped marks caused by an oil leak or drips.

Print - A machine produced reproduction of an electronic original store in memory.

Residual Image - A toner image that remains on the Drum after cleaning. The next image is placed on top of the residual image and both images are transferred to the next print.

NOTE: This defect, residual image, is one of three similar image quality problems, see list below. Refer to the other defects for additional information.

Ghosting (Drum related).

Offsetting (Fuser related).

Residual Image (Cleaner related).

Resolution - See the resolution specification.

Skewed image - See the Image Skew Specification.

Skips - An area on the print where the developed image is disturbed before or during fusing. Depending on the type of smear, it may look like a band or streak.

Smear - An area on the print were the developed image is disturbed before or during fusing. Depending on the type of smear, it may look like a band or streak.

Solid Area Deletions - Deletions which occur in a solid area.

Spot - An undesirable circular mark on the print that differs in color or density from the surrounding area.

Spot deletion - A circular shaped deletion. The edges can be fuzzy or sharply defined.

Spot, white/light/colored - A spot that is noticeable in an **image area**. See spot deletions.

Spot, dark/colored - A spot that is noticeable in a **non-image area**.

Streak - An undesirable strip on the print that differs in color or density from the surrounding area. The strip looks like it is comprised of many small lines of varying length and width giving the appearance of a brush stroke. See lines, bands, streaks.

Trail Edge Defects -

Darkened trail edges of solid areas (about the last 4MM of the solid area).

Trail edge deletions (TED's) - The last few MM's of solid areas are lighter in density. See Deletions.

Toner on the backside of the print.

Uneven density - Undesirable density differences or variations from one area of the print to another.

Wavy lines - Solid straight lines (typically in the lead to trail edge direction) that are wavy (or curvy).

Washed out image - an image that is too light or lacks density. It can be the entire image or a part of the image.

Wrinkles or creases - Creasing or folds on the print in the lead to trail edge direction.

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REP 1.1 TOP REAR COVER

PARTS LIST ON PL 1.1

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. (Figure 1): Open the Printer.
2. Open the Upper Rear Cover.
3. Remove four screws and remove the Top Rear Cover.

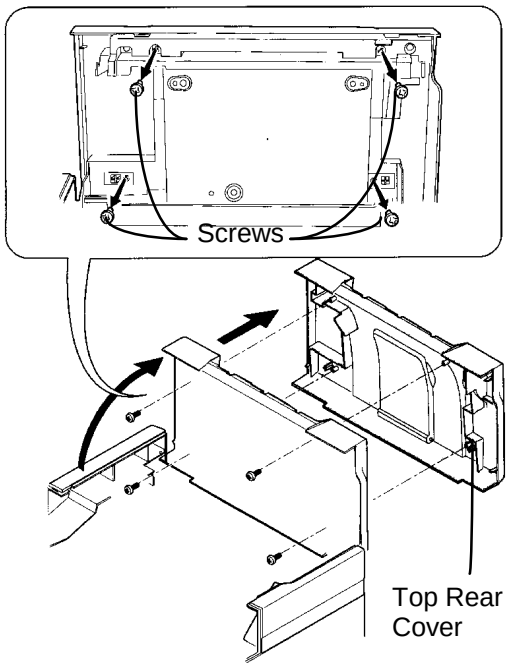


Figure 1. Removing the Top Rear Cover

REP 1.2 REAR COVER

PARTS LIST ON PL 1.1

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. (Figure 1): Remove two screws.
2. Remove two screws. lift up, then out, and remove the Rear Cover.

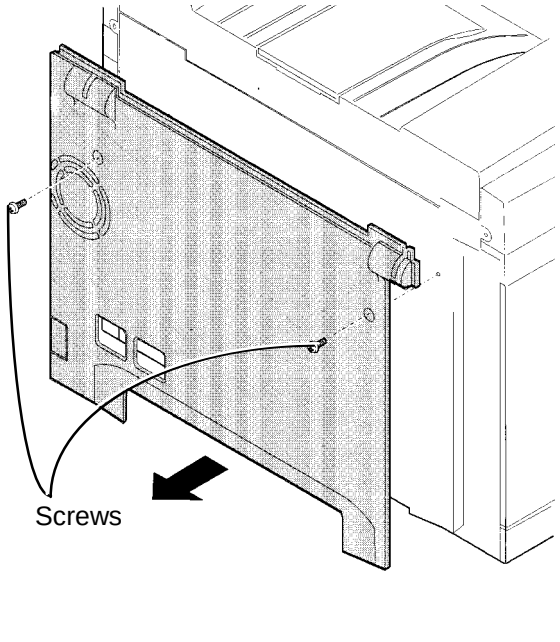


Figure 1. Removing the Rear Cover

REP 1.3 SIDE COVER

PARTS LIST ON PL 1.1

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Raise the Upper Rear Cover.
2. (Figure 1): Remove the screws and remove the Side Cover.

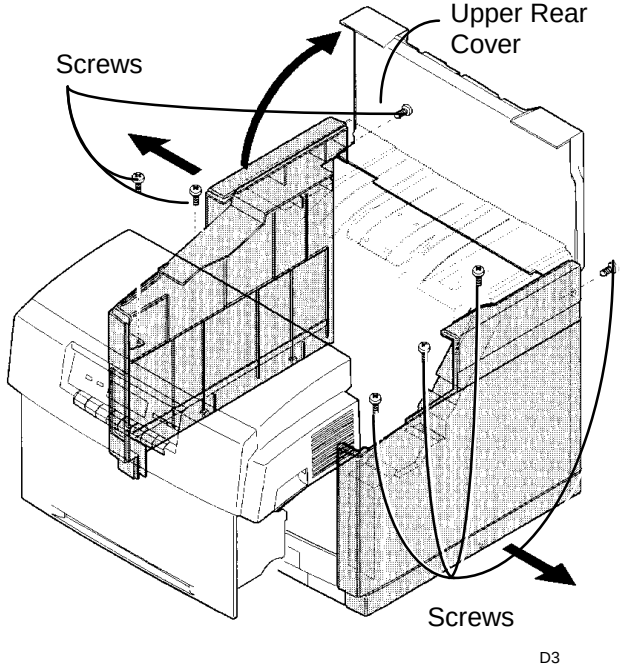


Figure 1. Removing the Side Covers

REP 1.4 FRONT COVER

PARTS LIST ON PL 1.1

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Release and open the Fuser Cover.
2. (Figure 1): Remove the screws and slide the cover forward slightly.
3. Disconnect CN305.
4. Remove the Front Cover.

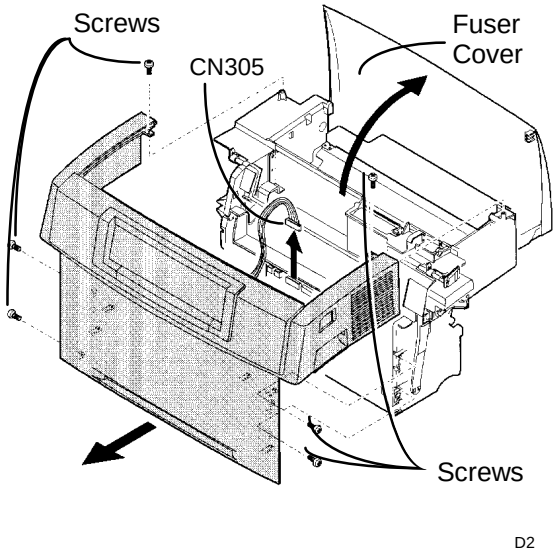


Figure 1. Removing the Front Cover

REP 2.1 TOP FRONT COVER

PARTS LIST ON PL 2.1

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Open the Transfer Drum Assembly.
2. Release and open the Fuser Cover.
3. (Figure 1): Remove five screws and remove the Top Front Cover.

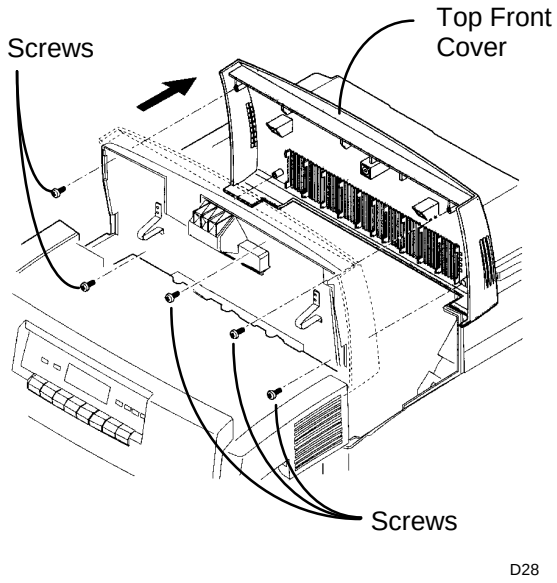


Figure 1. Removing the Top Front Cover

REP 3.1 LOW VOLTAGE POWER SUPPLY ASSEMBLY

PARTS LIST ON PL 3.1

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Top Rear Cover (REP 1.1).
   b. Rear Cover (REP 1.2).
   c. Right Side Cover (REP 1.3).
   d. Paper Cassette
   e. Photoreceptor Module.
   f. Color Developer Module.
   g. Black Developer Module.
2. (Figure 1): Remove screws and remove the Black Developer Connector Cover.
3. Disconnect CN201, CN702, CN703, CN704, CN707 and FT701 from the Low voltage Power Supply.

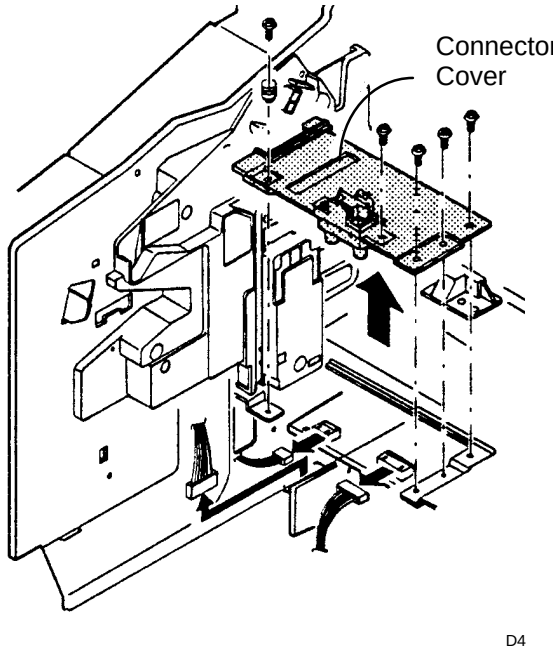


Figure 1. Removing the Connector Cover

4. (Figure 2): Disconnect CN1004 (AC connector next to PCU PWB). Remove the wiring from the harness.
5. Disconnect CN202 from the Cassette PWB.
6. Remove screws and remove the Low Voltage Power Supply.
7. If you are installing a new Low Voltage Power Supply Assembly, remove the Cassette PWB and install it on the new Power Supply.

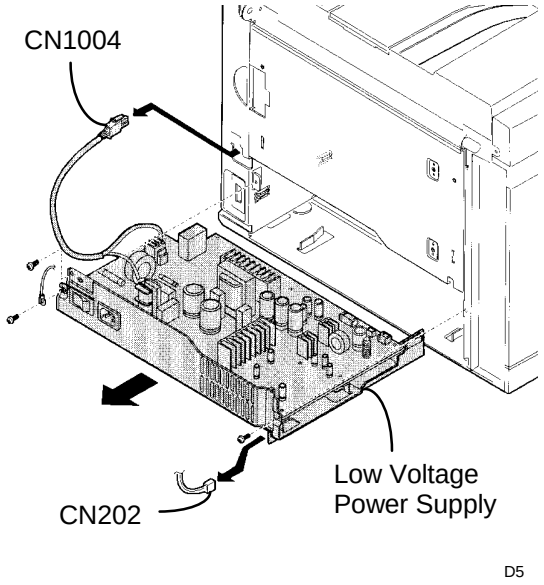


Figure 2. Removing the Low Voltage Power Supply

REP 3.2 CASSETTE PWB

PARTS LIST ON PL 3.1

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the Low Voltage Power Supply (REP 3.1).
2. (Figure 1): Remove screws and remove cassette PWB.

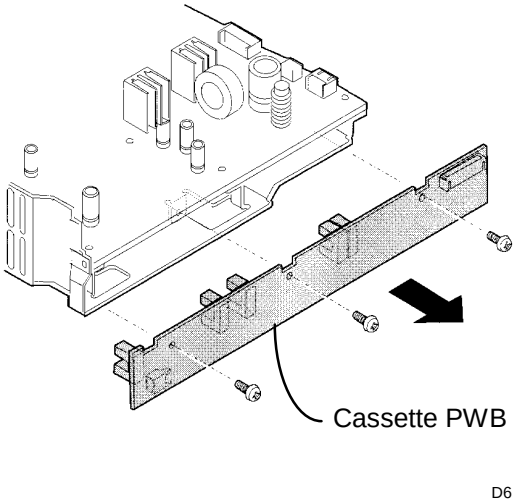


Figure 1. Removing the Cassette PWB

REP 3.3 PCU PWB

PARTS LIST ON PL 4.2

NOTE: Before removing the PCU PWB you must obtain some of the old NVM values. These values will then be entered in the new PWB NVM.

Refer to ADJ. 3.3A, and perform the following:

DETERMINING THE CONSUMABLE USAGE AND TONER CONCENTRATION VALUES, steps 1 through 6.

NOTE: If these steps cannot be performed because of a PCU PWB problem, use the values from the Diagnostic Test Pattern.

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the PCU PWB Cover.
2. Disconnect all of the Connectors.
3. Remove 4 screws and remove the PCU PWB.

REPLACEMENT

1. Install the new PWB.
2. Reconnect the Connectors.
3. Refer to ADJ. 3.3B, and perform the following:

   INITIALIZING THE NVM
   steps 1 through 7.
4. Reinstall the PCU PWB Cover.

REP 3.4 ESS PWB

PARTS LIST ON PL 3.1

NOTE: If the ESS PWB is being replace with one from another printer rather than a new PWB, the serial number from the other printer may still be stored in the ESS memory. If this is the case, refer to the replacement notes in this procedure.

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Disconnect all of the Connectors.
2. Loosen the two thumb screws.
3. Remove the ESS PWB.
4. Remove any customer RAM and reinstall in the new PWB.

REPLACEMENT

1. Install the new PWB.
2. Notify the customer so that they can setup the network values.

NOTE 1: If the customer is using CentreWare have the customer write their printer serial number over any existing serial number.

NOTE 2: If this printer is connected as a parallel printer you cannot enter the serial number, use GP 3.5 to perform a factory reset. This will erase any existing serial number.

REP 4.1 MAIN DRIVE MOTOR

PARTS LIST ON PL 4.1

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Right Side Cover (REP 1.3).
   b. Top Cover (REP 1.1).
   c. Rear Cover (REP 1.2).
2. (Figure 1): Remove the two screws and the E-ring and remove the Harness Cover.

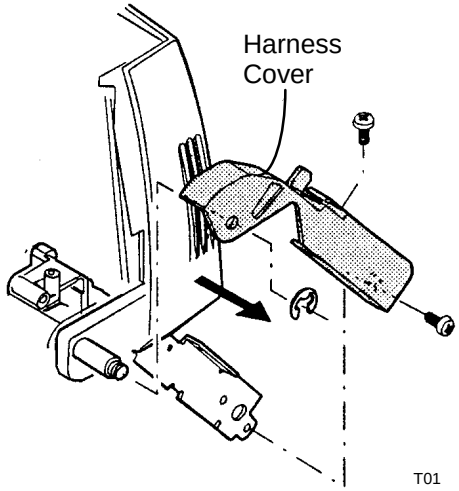


Figure 1. Removing the Harness Cover

3. (Figure 2): Loosen the Idler, if required.
4. Disconnect CN112 and remove from the harness.
5. Remove the screws and remove the Main Drive Motor Assembly.

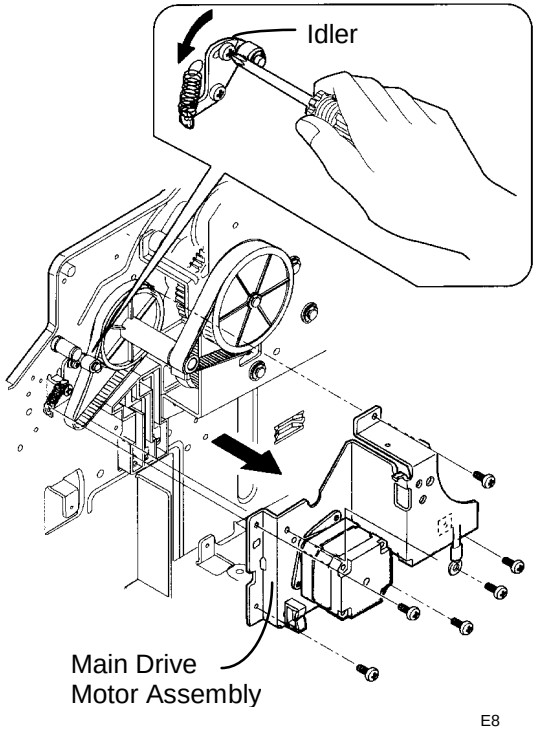


Figure 2. Removing the Main Drive Motor Assembly

6. (Figure 3): Remove the Main Drive Motor and Motor Spacers.

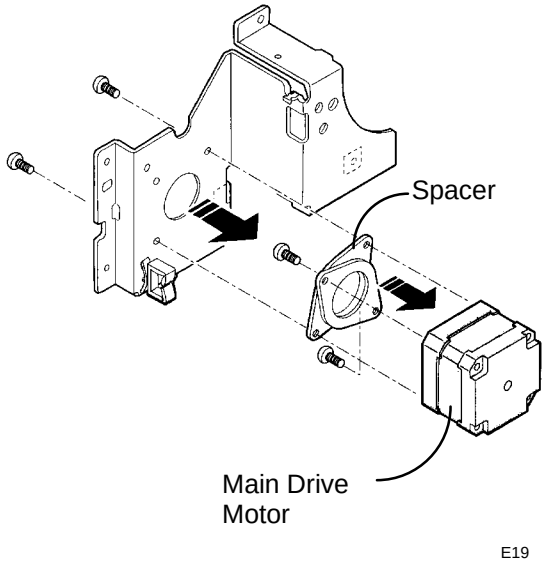


Figure 3. Removing the Main Drive Motor

REP 4.2 MAIN DRIVE MOTOR BELTS

PARTS LIST ON PL 4.4

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Right Side Cover (REP 1.3).
   b. Top Cover (REP 1.1).
   c. Rear Cover (REP 1.2).
2. (Figure 1): Loosen the Idler, if required.
3. Disconnect CN112 and remove from the harness.
4. Remove the screws and remove the Main Drive Motor Assembly.

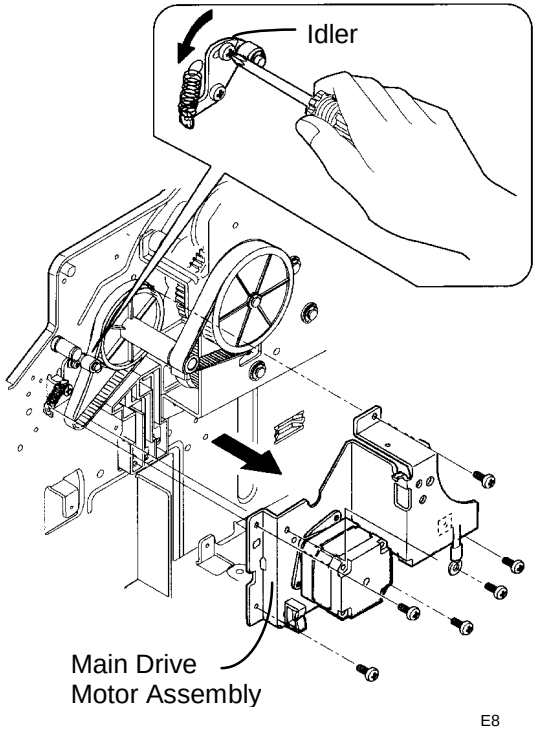


Figure 1. Removing the Main Drive Motor Assembly

5. (Figure 2): Remove the Main Drive Motor Belts.

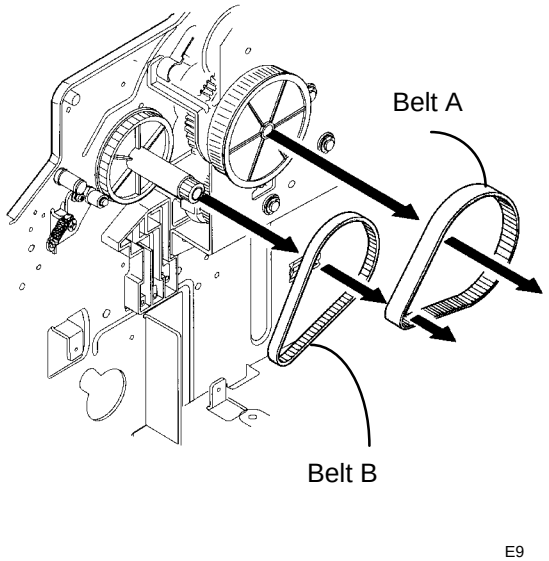


Figure 2. Removing the Main Drive Belts

REP 4.3 DEVELOPER DRIVE MOTOR BELTS

PARTS LIST ON PL 4.5

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Print Drum Module.
   b. Color Developer Module.
   c. Black Developer Module.
   d. Right Side Cover (REP 1.3).
   e. Top Cover (REP 1.1).
   f. Rear Cover (REP 1.2).
2. Remove the Main Drive Motor Belts (REP 4.2).
3. (Figure 1): Remove the Outer Drive Frame.
   a. Remove the Pulley.
   b. Remove the 4 Clutch Covers
   c. Remove the E Rings and Screws and then remove the Outer Drive Frame.

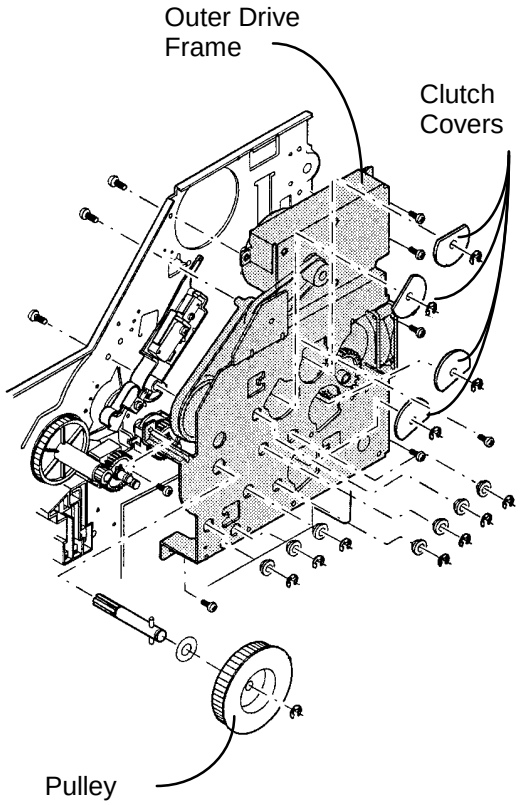


Figure 1. Removing the Outer Drive Frame

4. (Figure 2): Remove Developer Drive Belt C.

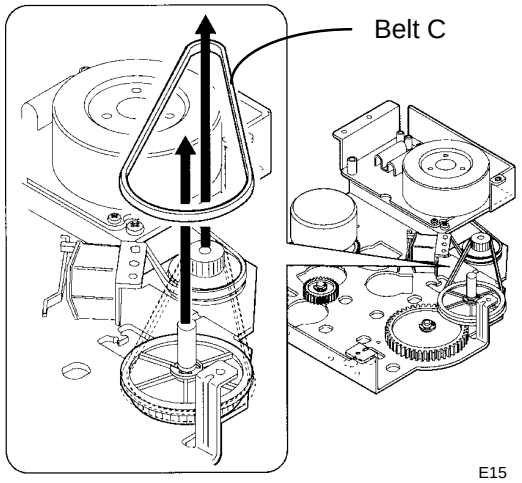


Figure 2. Removing Developer Drive Belt C

5. (Figure 3): Remove Developer Drive Belt D.

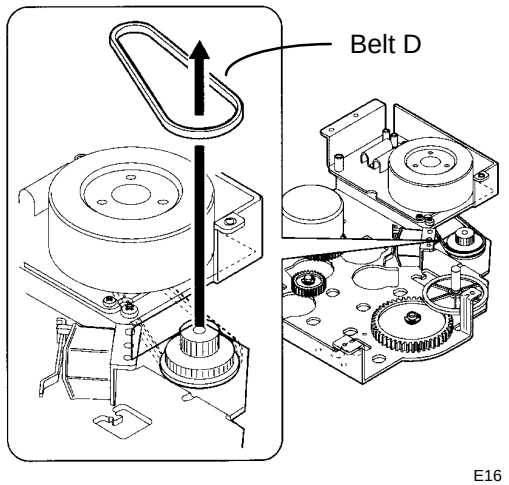


Figure 3. Removing Developer Drive Belt D

REP 4.4 INTERLOCK SWITCHES

PARTS LIST ON PL 4.5

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Print Drum Module.
   b. Color Developer Module.
   c. Black Developer Module.
   d. Right Side Cover (REP 1.3).
   e. Top Cover (REP 1.1).
   f. Rear Cover (REP 1.2).
2. Remove the Main Drive Motor Belts (REP 4.2)
3. (Figure 1): Remove the Outer Drive Frame.
   a. Remove the Pulley.
   b. Remove the 4 Clutch Covers
   c. Remove the E Rings and Screws and then remove the Outer Drive Frame.

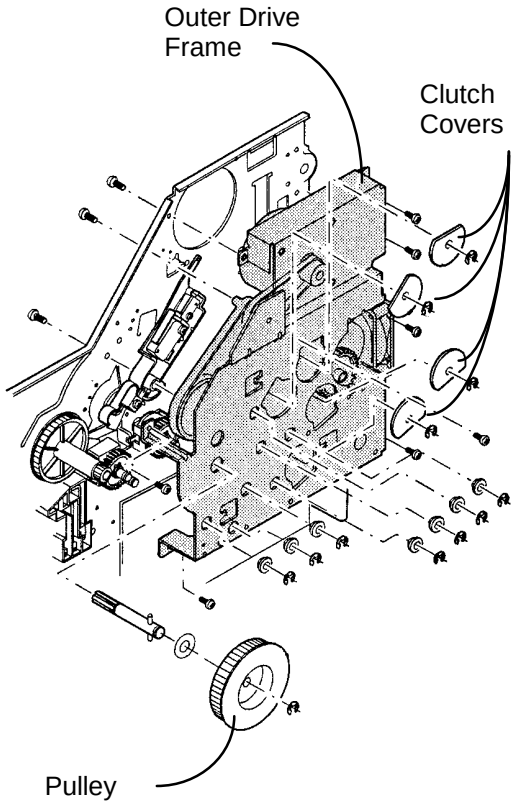


Figure 1. Removing the Outer Drive Frame

4. (Figure 2): Remove the Interlock Return Spring.
5. Remove the Interlock Switches.

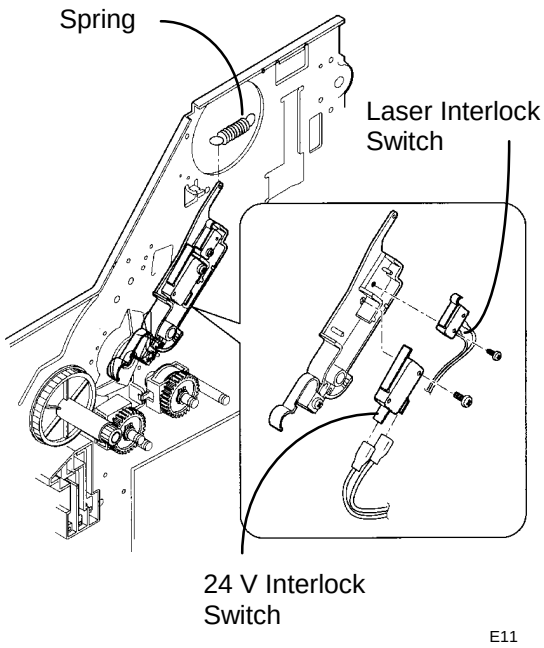


Figure 2. Removing the Interlock Switches

REP 4.5 COLOR TONER MOTOR

PARTS LIST ON PL 4.3

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Print Drum Module.
   b. Color Developer Module.
   c. Black Developer Module.
   d. Right Side Cover (REP 1.3).
   e. Top Cover (REP 1.1).
   f. Rear Cover (REP 1.2).
2. Remove the Main Drive Motor Belts (REP 4.2)
3. (Figure 1): Remove the Outer Drive Frame.
   a. Remove the Pulley.
   b. Remove the 4 Clutch Covers
   c. Remove the E Rings and Screws and then remove the Outer Drive Frame.

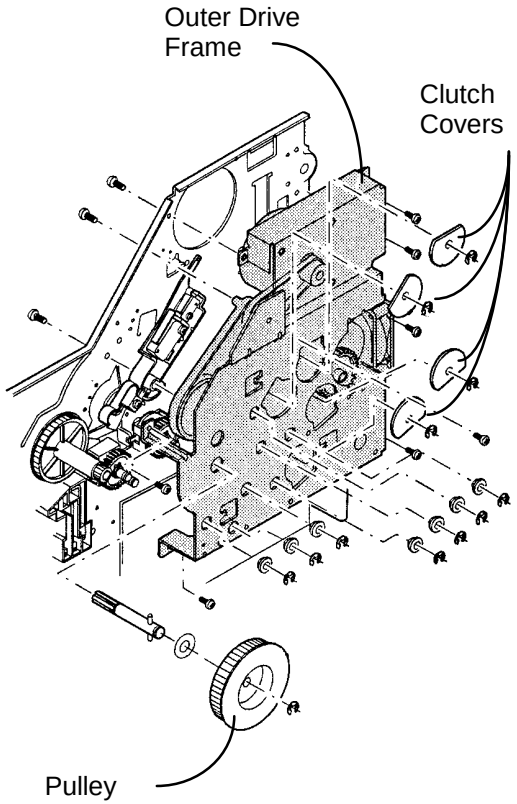


Figure 1. Removing the Outer Drive Frame

4. (Figure 2): Remove the Color Toner Motor.

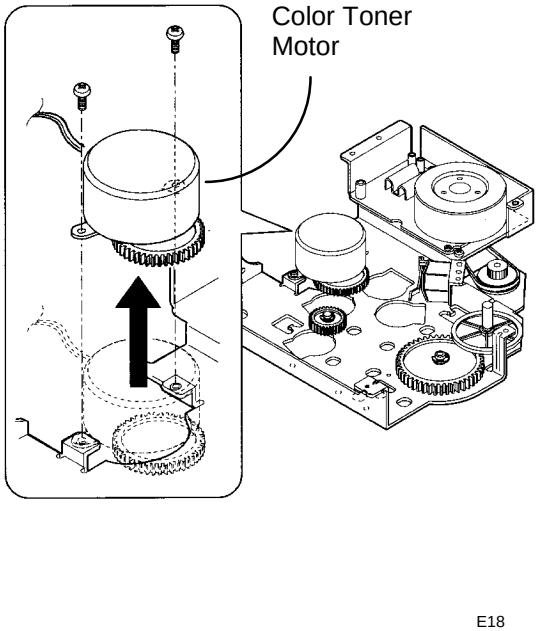


Figure 2. Removing the Color Toner Motor

REP 4.6 DEVELOPER MOTOR

PARTS LIST ON PL 4.3

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Print Drum Module.
   b. Color Developer Module.
   c. Black Developer Module.
   d. Right Side Cover (REP 1.3).
   e. Top Cover (REP 1.1).
   f. Rear Cover (REP 1.2).
2. Remove the Main Drive Motor Belts (REP 4.2)
3. Remove the Developer Drive Motor Belts (REP 4.3)
4. (Figure 1): Disconnect the connector and remove the Developer Motor.

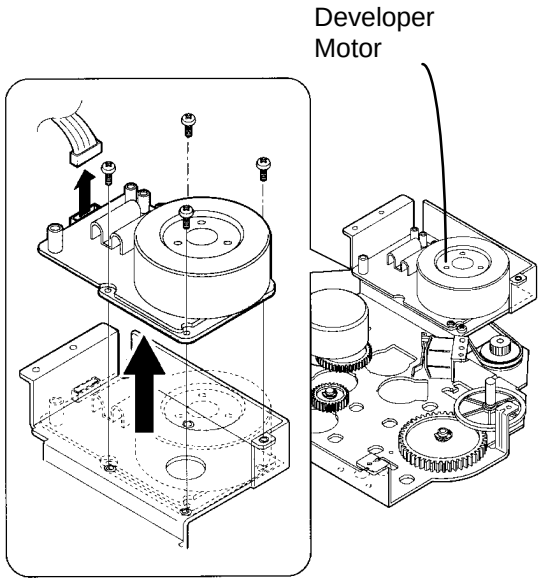


Figure 1. Removing the Developer Motor

REP 4.7 TONER SOLENOIDS

PARTS LIST ON PL 4.6

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Print Drum Module.
   b. Color Developer Module.
   c. Black Developer Module.
   d. Right Side Cover (REP 1.3).
   e. Top Cover (REP 1.1).
   f. Rear Cover (REP 1.2).

2. (Figure 1): Remove the Drive Cover.

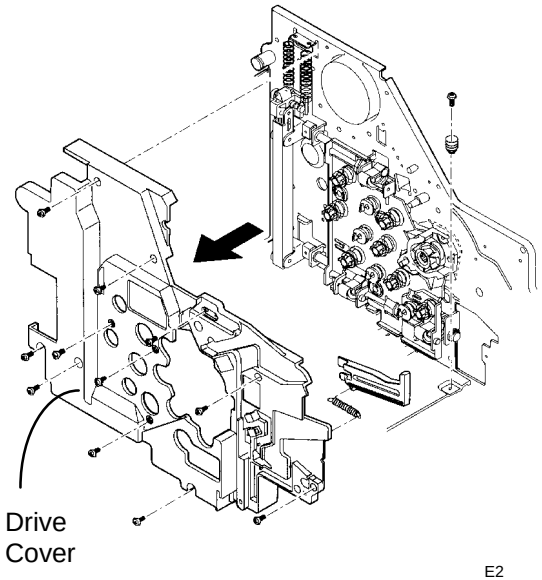


Figure 1. Removing the Drive Cover

3. (Figure 2): Loosen the Tension springs.

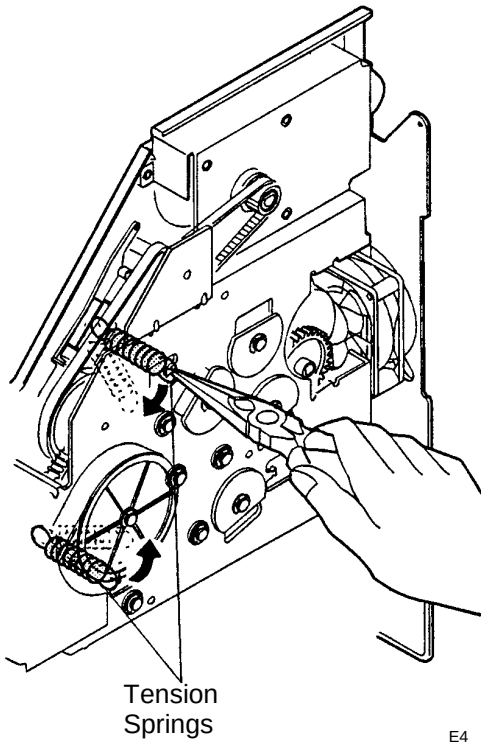


Figure 2. Removing the Springs

4. (Figure 3): Remove the 3 pins and the Block.

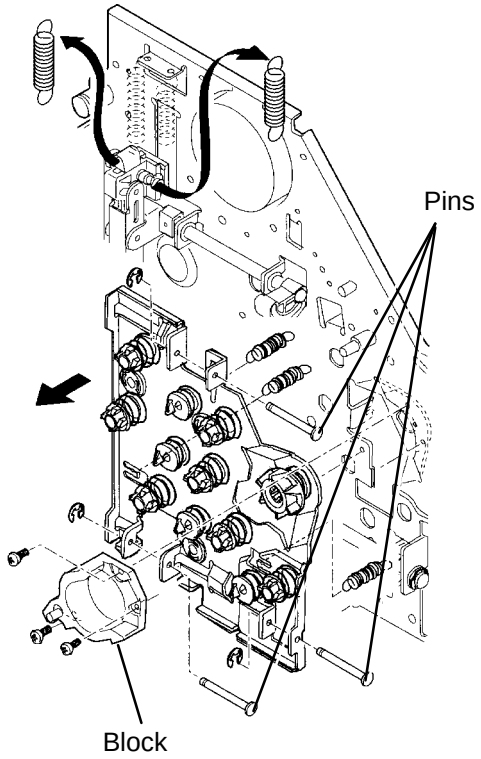


Figure 3. Removing the Pins and Block

5. (Figure 4): Remove the Inner Drive Frame.

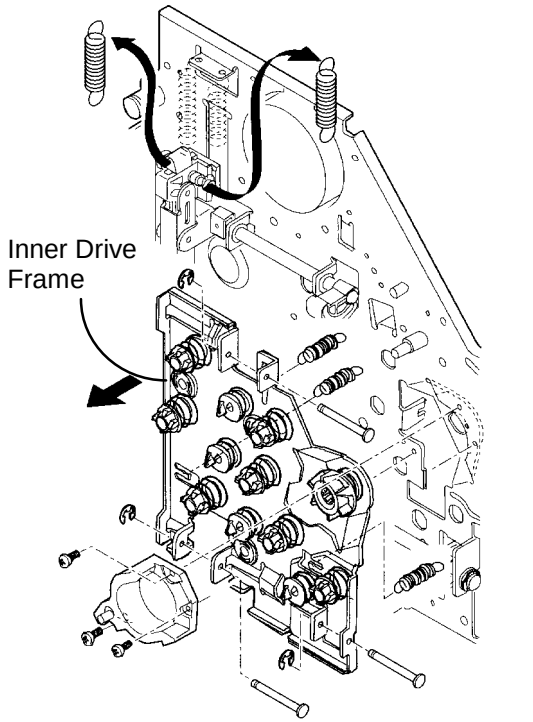


Figure 4. Removing the Inner Frame

6. (Figure 5): Remove the appropriate Toner Solenoid.

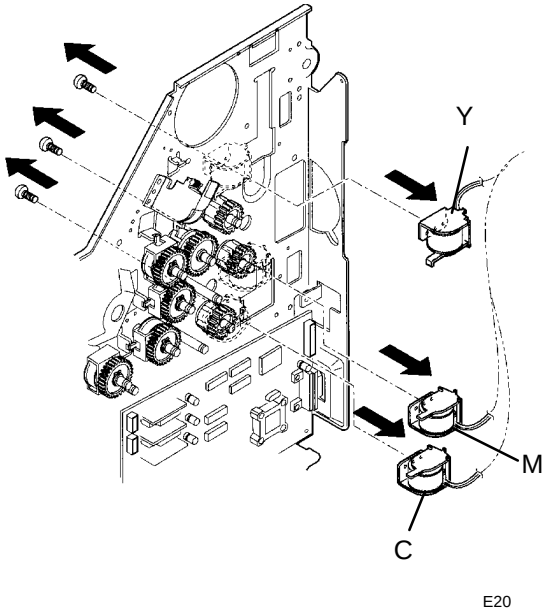


Figure 5. Removing the Toner Solenoid

REP 4.8 MAGNETIC ROLLER CLEANING SOLENOID

PARTS LIST ON PL 4.6

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Print Drum Module.
   b. Color Developer Module.
   c. Black Developer Module.
   d. Right Side Cover (REP 1.3).
   e. Top Cover (REP 1.1).
   f. Rear Cover (REP 1.2).
2. Remove the Main Drive Motor Belts (REP 4.2)
3. (Figure 1): Remove the Outer Drive Frame.
   a. Remove the Pulley.
   b. Remove the 4 Clutch Covers
   c. Remove the E Rings and Screws and then remove the Outer Drive Frame.

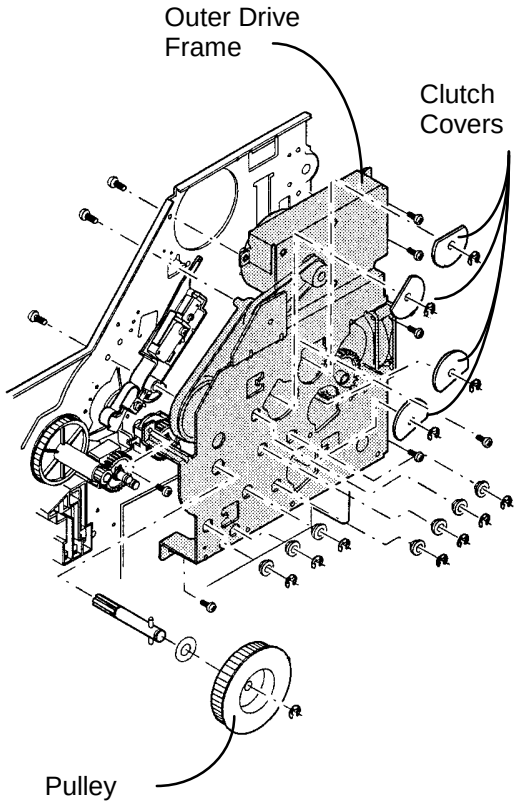


Figure 1. Removing the Outer Drive Frame

4. (Figure 2): Remove the Magnetic Roller Cleaning Solenoid.

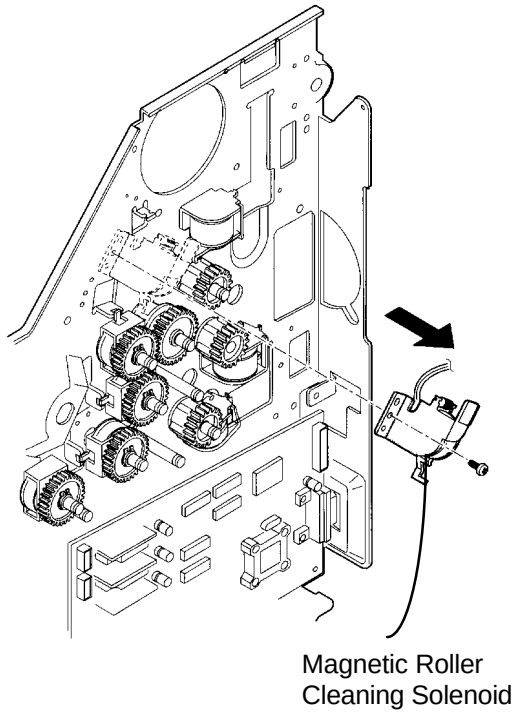


Figure 2. Removing the Magnetic Roller Cleaning Solenoid

REP 5.1 C, M, Y, TONER CLUTCHES AND MAGNETIC ROLLER CLEANER CLUTCH

PARTS LIST ON PL 5.5

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. (Figure 1): Remove the following:
   a. Print Drum Module.
   b. Color Developer Module.
   c. Black Developer Module.
   d. Right Side Cover (REP 1.3).
   e. Top Cover (REP 1.1).
   f. Rear Cover (REP 1.2).
2. (Figure 1): Remove the appropriate Clutch Cover and remove the Clutch.

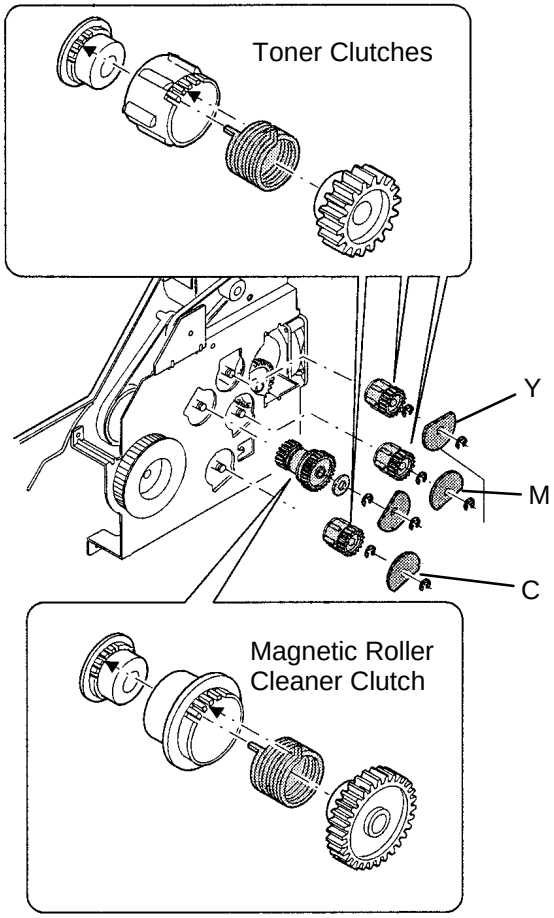


Figure 1. Removing the Clutches

REPLACEMENT

NOTE: When installing a new clutch, put the spring in the center of the 5 notches.

REP 5.2 MAGNETIC ROLLER CLUTCHES

PARTS LIST ON PL 5.1

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Print Drum Module.
   b. Color Developer Module.
   c. Black Developer Module.
   d. Right Side Cover (REP 1.3).
   e. Top Cover (REP 1.1).
   f. Rear Cover (REP 1.2).
2. Remove the Main Drive Motor Belts (REP 4.2).
3. (Figure 1): Remove the Drive Cover.

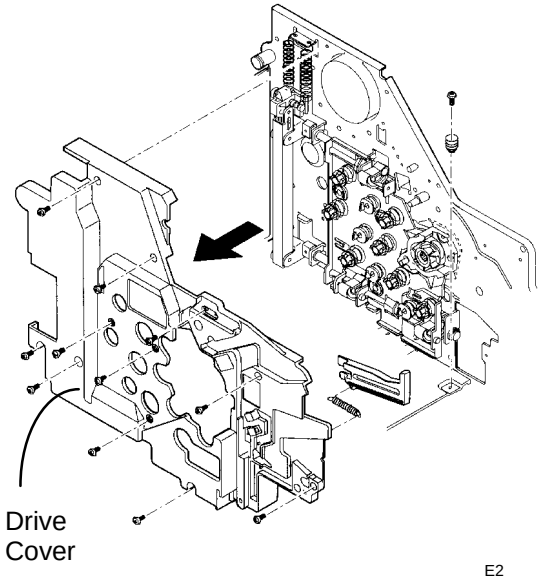


Figure 1. Removing the Drive Cover

4. (Figure 2): Remove the Tension springs.

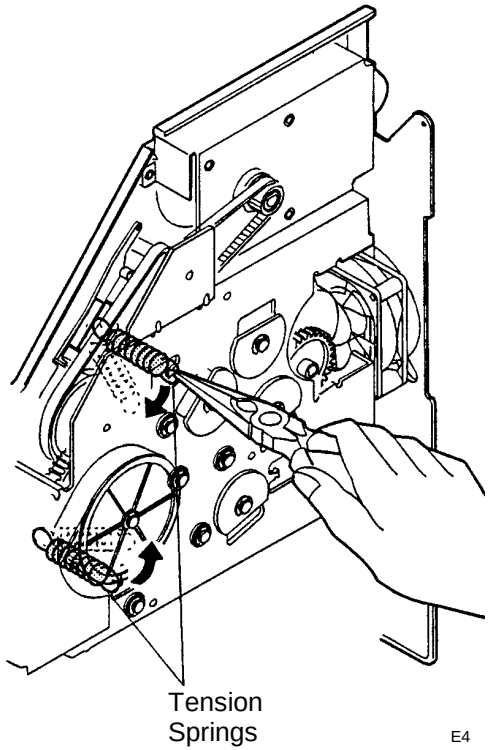


Figure 2. Removing the Springs

5. (Figure 3): Remove the 3 pins and the Block.

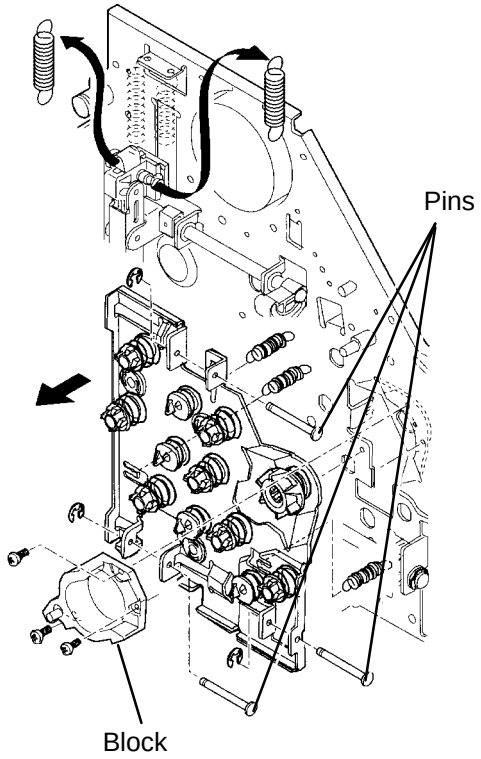


Figure 3. Removing the Pins and Block

6. (Figure 4): Remove the Inner Drive Frame.

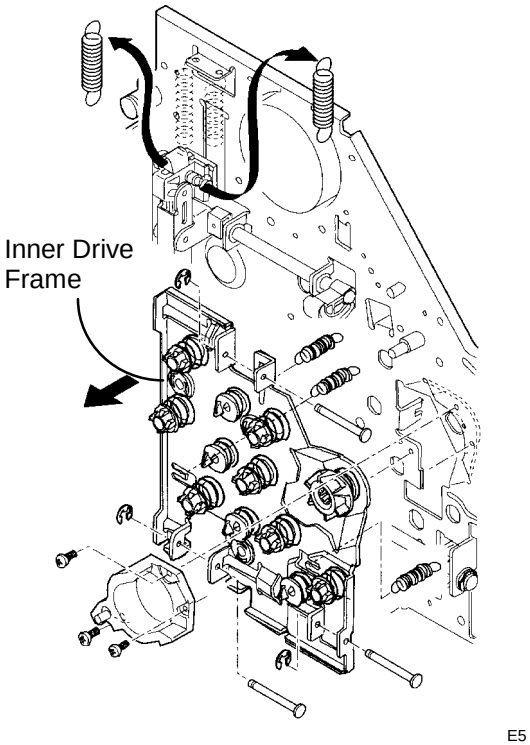


Figure 4. Removing the Inner Drive Frame

7. (Figure 5): Remove the Outer Drive Frame.
   a. Remove the Pulley.
   b. Remove the Clutch Covers
   c. Remove the Outer Drive Frame.

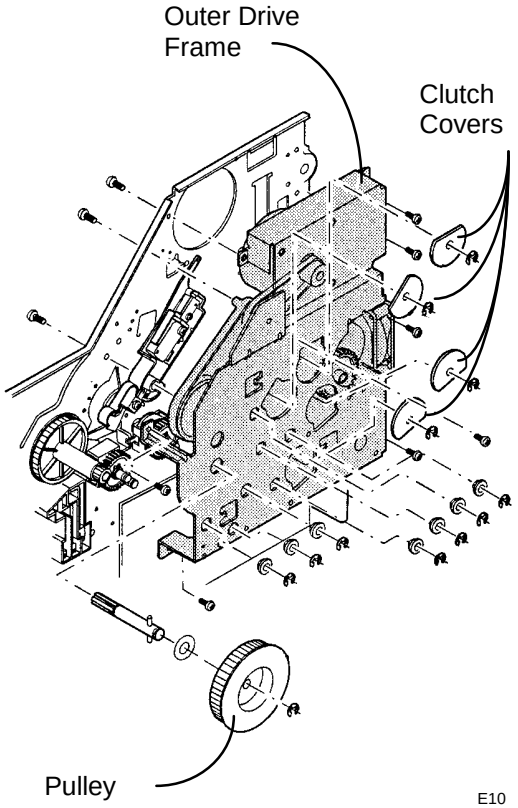


Figure 5. Removing the Outer Drive Frame

8. (Figure 6): Remove the Magnetic Roller Clutch.

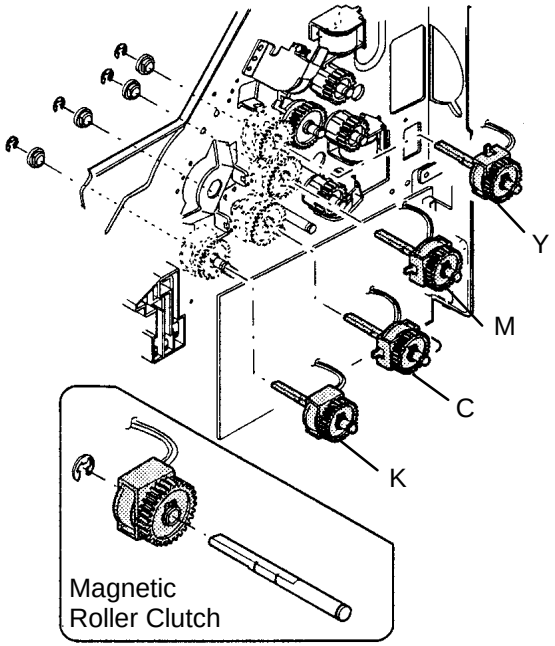


Figure 6. Removing the Magnetic Roller Clutch

REP 6.1 DRUM TERMINALS

PARTS LIST ON PL 6.1

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. (Figure 1): Remove the following:
   a. Print Drum Module.
   b. Color Developer Module.
   c. Black Developer Module.
   d. Right Side Cover (REP 1.3).
   e. Top Cover (REP 1.1).
   f. Rear Cover (REP 1.2).
2. (Figure 1): Remove the screws and remove the Transfer, Charge, and Grid leads.

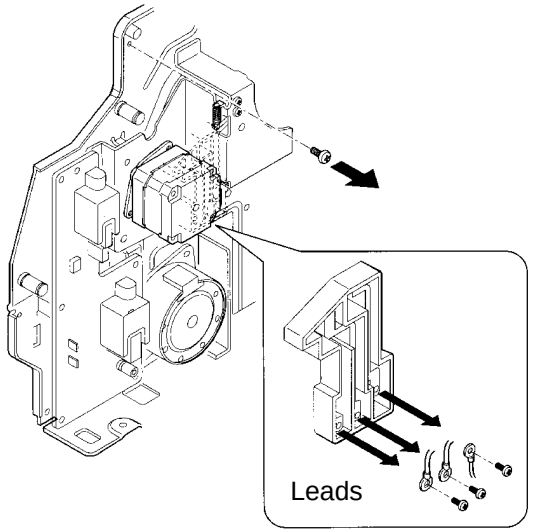


Figure 1. Removing the High Voltage Leads

3. (Figure 2): Remove the Drive Cover.

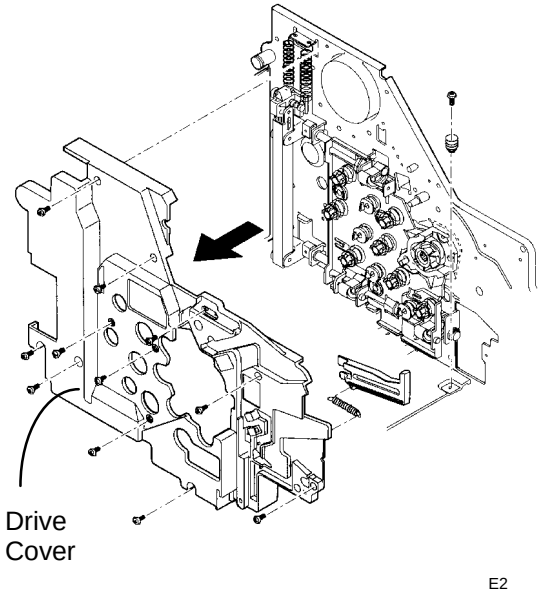


Figure 2. Removing the Drive Cover

4. (Figure 3): Remove the Drum Terminals.

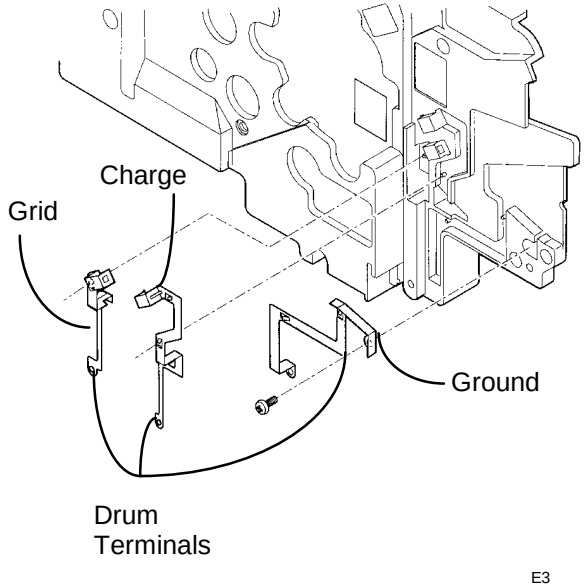


Figure 3. Removing the Drum Terminals

REP 6.2 SLIDE CAMS

PARTS LIST ON PL 6.2

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. (Figure 1): Remove the following:
   a. Print Drum Module.
   b. Color Developer Module.
   c. Black Developer Module.
   d. Right Side Cover (REP 1.3).
   e. Top Cover (REP 1.1).
   f. Rear Cover (REP 1.2).
2. (Figure 1): Remove the Drive Cover.

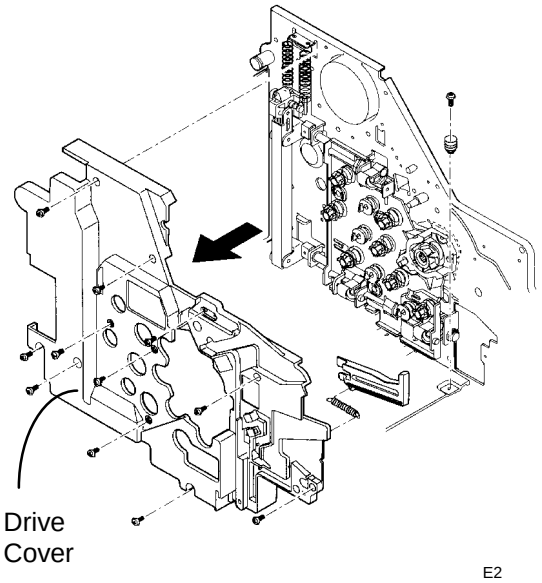


Figure 1. Removing the Drive Cover

3. (Figure 2): Remove the Tension springs.

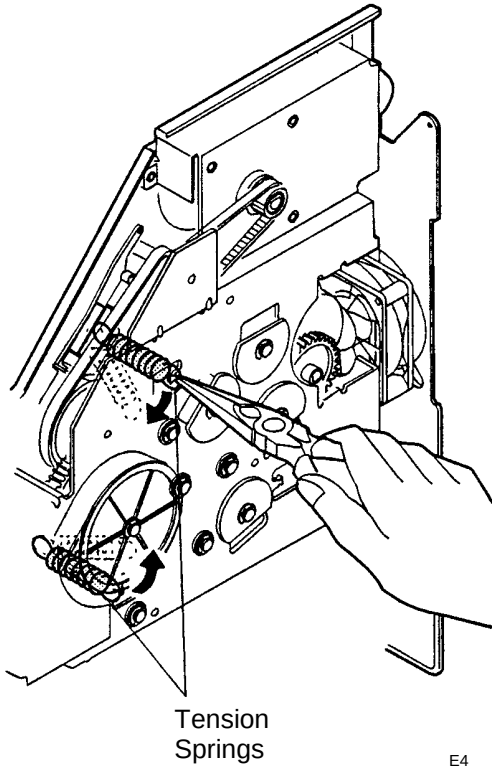


Figure 2. Removing the Springs

4. (Figure 3): Remove the 3 pins and the Block.

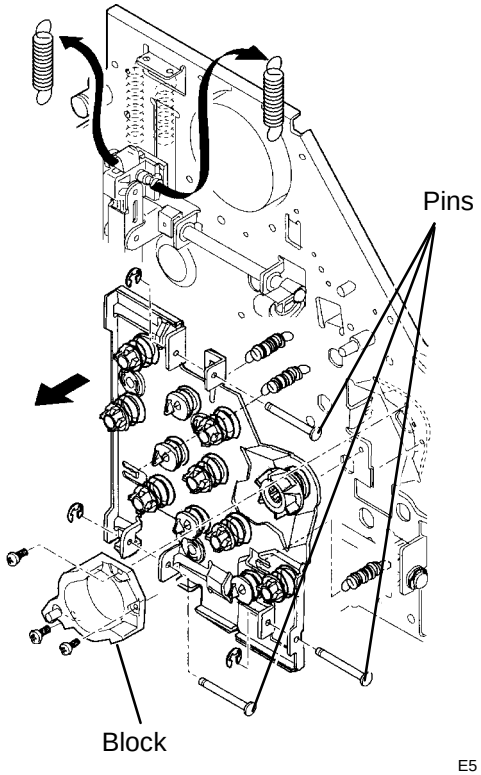


Figure 3. Removing the Pins and Block

5. (Figure 4): Remove the Inner Drive Frame and the Slide Lever Springs.

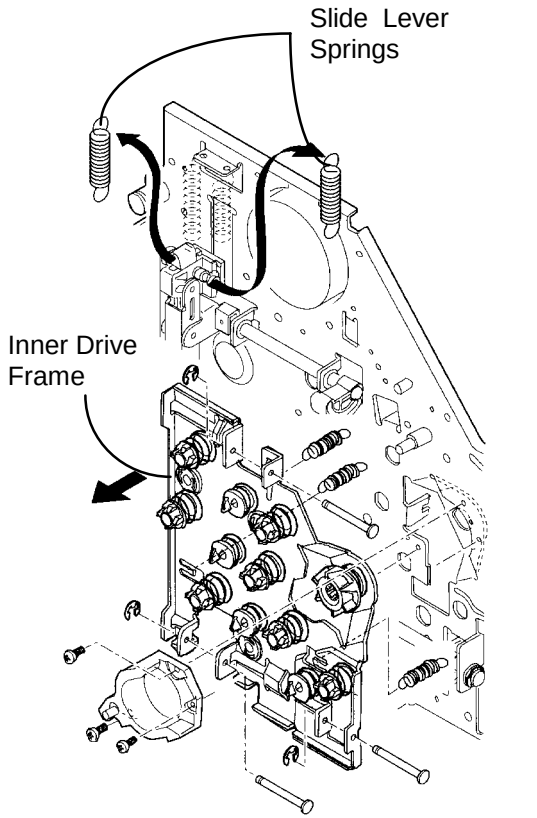


Figure 4. Removing the Inner Frame and Springs

6. (Figure 5): Remove the pin and Slide Cam Lever.

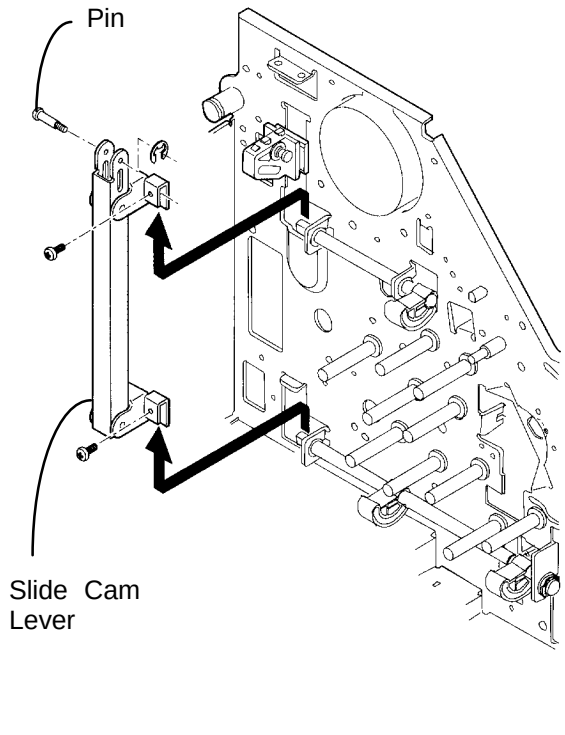


Figure 5. Removing the Slide Cam Lever

7. (Figure 6): Remove the Shafts and Cams.

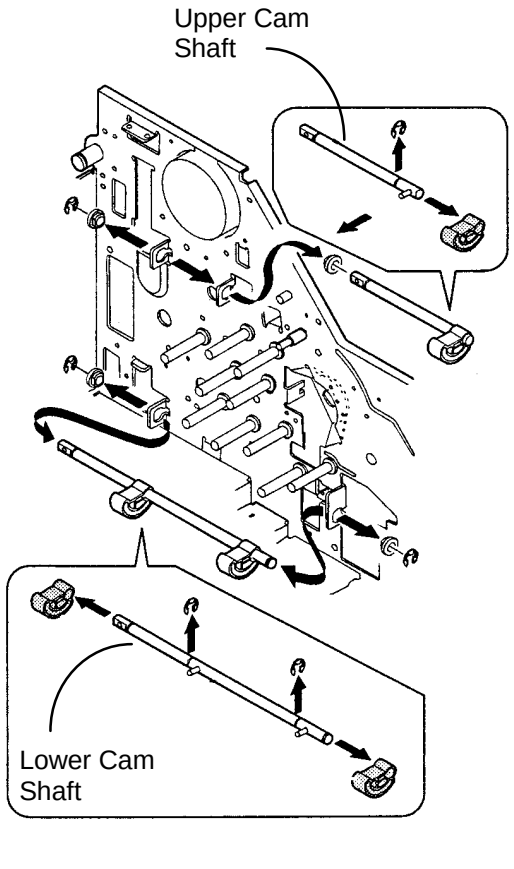


Figure 6. Removing the Shafts and Cams

REP 8.1 PAPER GUIDE (U-SHAPED)

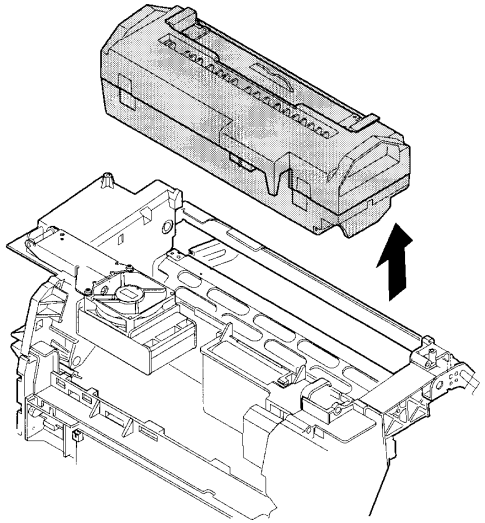
PARTS LIST ON PL 8.1

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

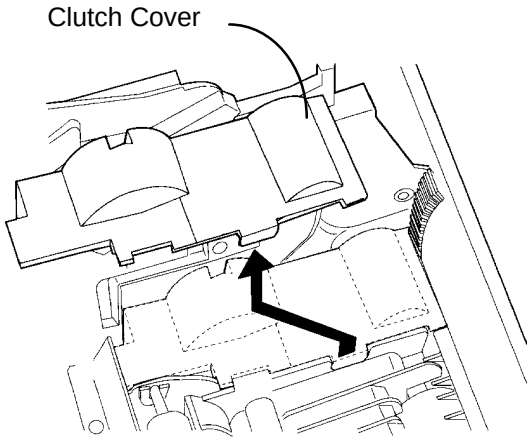
1. Remove the Paper Cassette.
2. Remove the Front Cover (REP 1.4).
3. (Figure 1) Open the Transfer Drum Assembly and remove the Fuser.



A41

Figure 1. Removing the Fuser

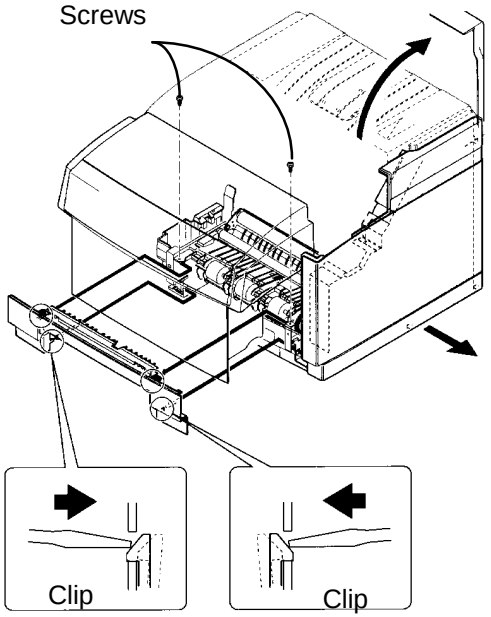
4. (Figure 2): Remove the Clutch Cover.



D7

Figure 2. Removing the Clutch Cover

5. (Figure 3): Remove two screws and release the two clips.
6. Remove the U-shaped Paper Guide.



D8

Figure 3. Removing the Paper Guide

REP 8.2 PAPER FEED ASSEMBLY

PARTS LIST ON PL 8.1

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Toner Waste Bottle
   b. Right Side Cover (REP 1.3)
   c. Paper Guide (REP 8.1)
2. (Figure 1): Remove the Connector Cover.

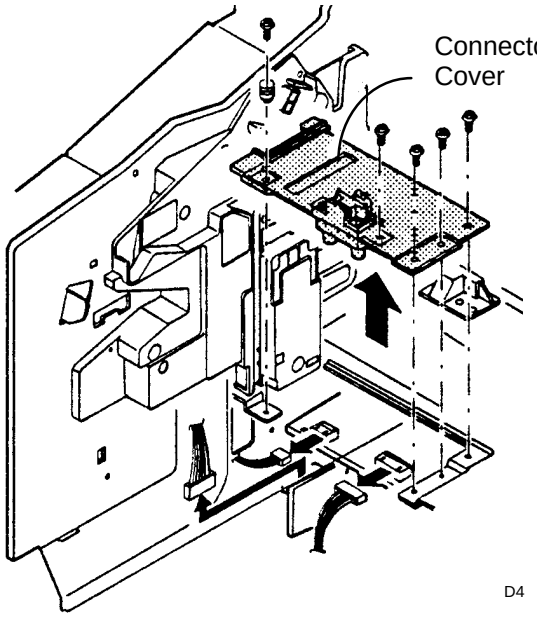


Figure 1. Removing the Connector Cover

3. (Figure 2): Remove the screws, disconnect the connector and remove the Paper Feed Motor.

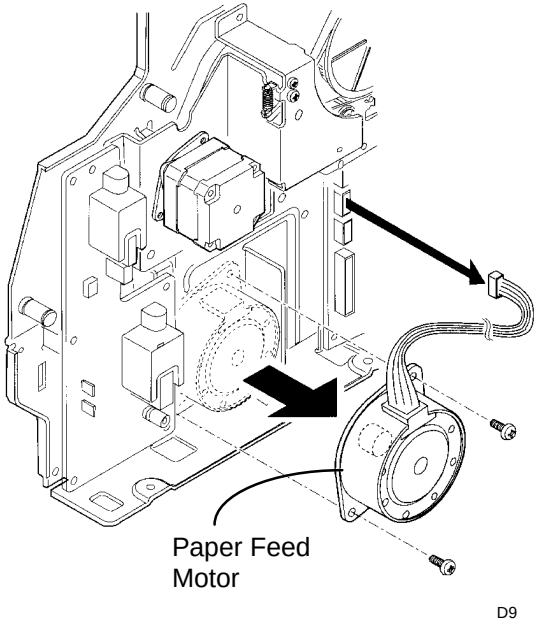


Figure 2. Removing the Paper Feed Motor

4. (Figure 3): Remove the four screws and disconnect the connectors (CN101, 102, 105).
5. Pull the printer forward until it is resting on the edge of the work surface.

Note: During the removal of the Paper Feeder Assembly it will be necessary to pivot the Transfer Drum Assembly.

6. While feeding the wires through the hole, remove the Paper Feed Assembly.

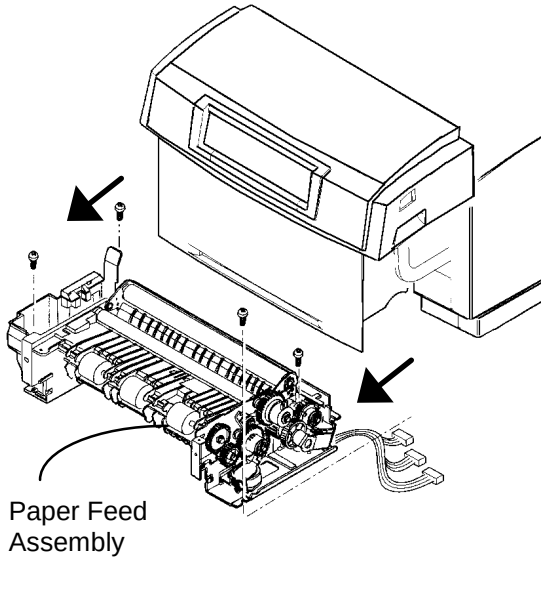


Figure 3. Removing the Paper Feed Assembly

REP 8.3 TRAY EMPTY SENSOR

PARTS LIST ON PL 8.2

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Paper Guide (REP 8.1)
   b. Paper Feed Assembly (REP 8.2).
2. (Figure 1): Unclip and carefully remove the Tray Empty Sensor in the direction shown.

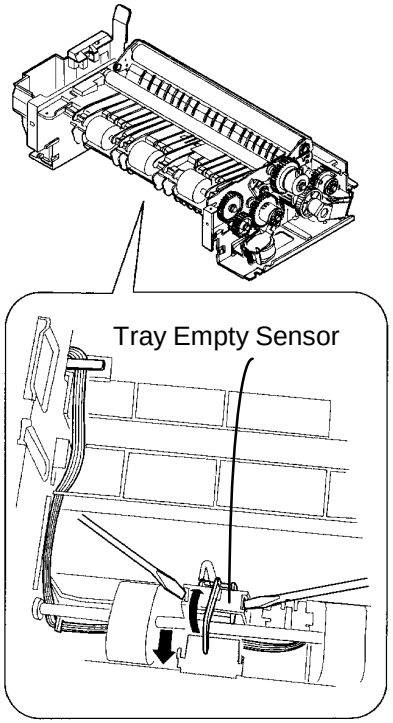


Figure 1. Removing the Tray Empty Sensor

REP 8.4 REGISTRATION SENSOR

PARTS LIST ON PL 8.2

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Paper Guide (REP 8.1)
   b. Paper Feed Assembly (REP 8.2).
   c. Tray Empty Sensor (REP 8.3).
2. (Figure 1): Unclip and carefully remove the Registration Sensor.

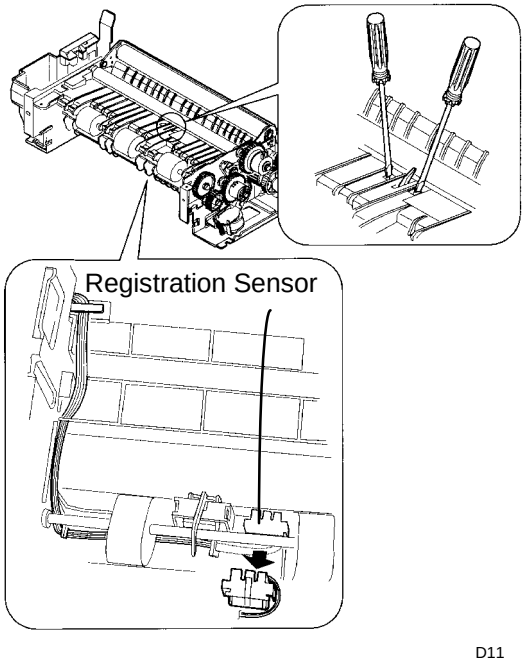


Figure 1. Removing the Registration Sensor

REPLACEMENT

NOTE: When replacing the Registration Sensor, make sure that it is snapped securely in place and the actuator moves freely.

REP 8.5 FEED CLUTCH & SOLENOID

PARTS LIST ON PL 8.2

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Paper Guide (REP 8.1)
   b. Paper Feed Assembly (REP 8.2).
2. (Figure 1): Remove the Feed Clutch and Feed Solenoid.

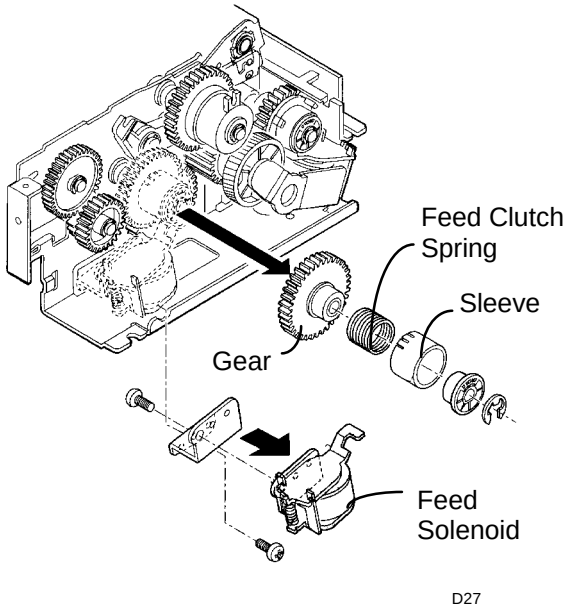


Figure 1. Removing the Feed Solenoid and Feed Clutch

REPLACEMENT

NOTE: After assembling the components, hand crank the feeder through several cycles. Energize the Feed Solenoid several times by hand and check that the Feed Solenoid engages the Feed Clutch and stops the rollers in the "flat down" position.

REP 8.6 REGISTRATION CLUTCH

PARTS LIST ON PL 8.3

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Paper Guide (REP 8.1)
   b. Paper Feed Assembly (REP 8.2).
2. (Figure 1): Remove the Grounding Roller Solenoid, Lower Registration Roller Gear and the Registration Clutch.

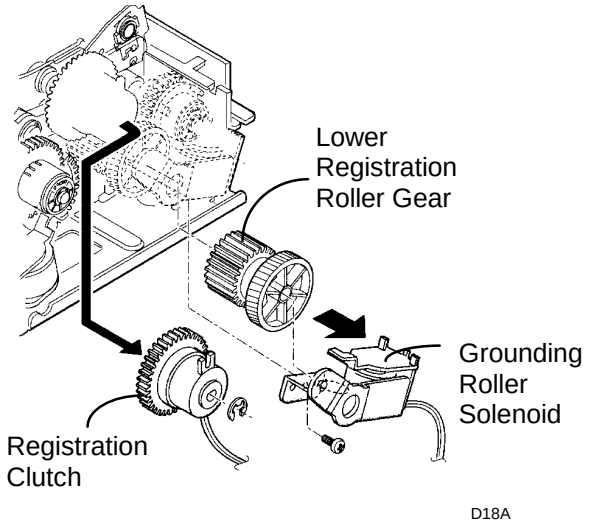


Figure 1. Removing the Registration Clutch

REPLACEMENT

NOTE: After assembling the components, hand crank the feeder through several cycles. Energize the Grounding Roller Solenoid several times by hand and check that the Grounding Roller Solenoid engages the Grounding Roller Clutch and stops the Grounding Roller in the down position.

REP 8.7 GROUNDING ROLLER CLUTCH

PARTS LIST ON PL 8.7

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Paper Guide (REP 8.1)
   b. Paper Feed Assembly (REP 8.2).
2. (Figure 1): Remove the Grounding Roller Clutch.

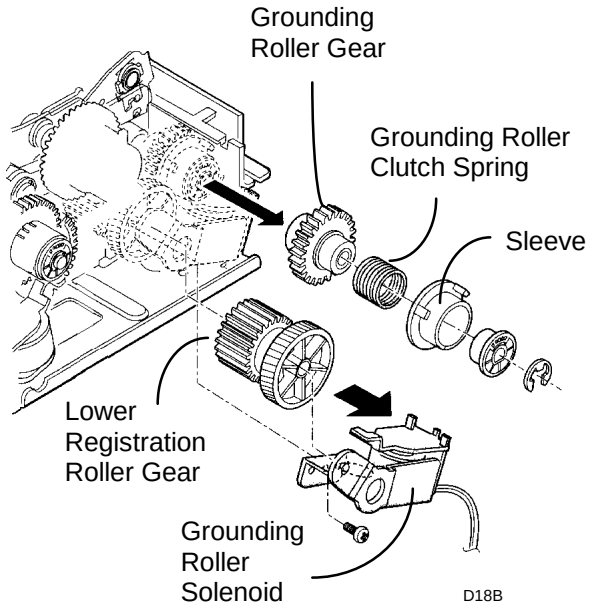


Figure 1. Removing the Grounding Roller Clutch

REPLACEMENT

NOTE: After assembling the components, hand crank the feeder through several cycles. Energize the Grounding Roller Solenoid several times by hand and check that the Grounding Roller Solenoid engages the Grounding Roller Clutch and stops the Grounding Roller in the down position.

REP 8.8 PAPER DRIVE ROLLER

PARTS LIST ON PL 8.2

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Paper Guide (REP 8.1)
   b. Paper Feed Assembly (REP 8.2).
2. (Figure 1): Remove the Waste Toner Sensor cover and the Waste Toner Sensor.
3. Unhook the spring, slide it out the bottom, and remove the Waste Toner Box from the Paper Feed Assembly.

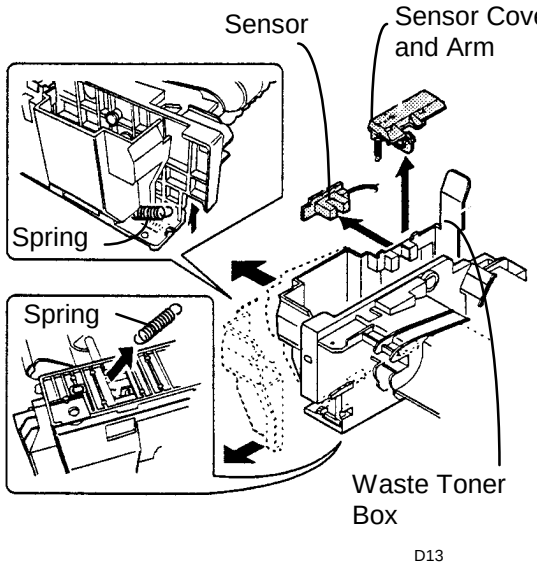


Figure 1. Removing the Toner Box

4. (Figure 2): Remove the E-Rings, Gears, and Bearings. Remove the Paper Drive Roller.

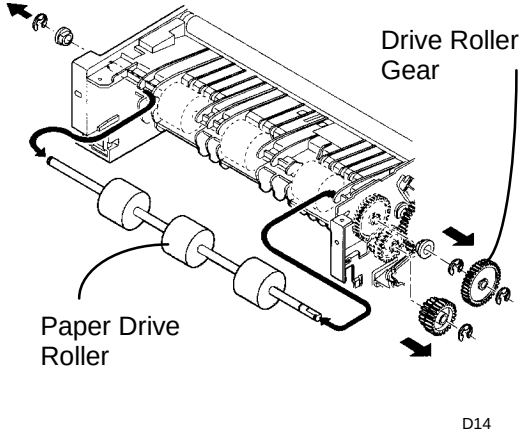


Figure 2. Removing the Paper Drive Roller

REPLACEMENT

NOTE: When reassembling the Waste Toner Box, make sure it slides back and forth smoothly.

REP 8.9 GROUNDING ROLLER

PARTS LIST ON PL 8.1

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Paper Guide (REP 8.1)
   b. Paper Feed Assembly (REP 8.2).
2. (Figure 1): Remove the Waste Toner Sensor cover and the Waste Toner Sensor.
3. Unhook the spring, slide it out the bottom, and remove the Waste Toner Box from the Paper Feed Assembly.

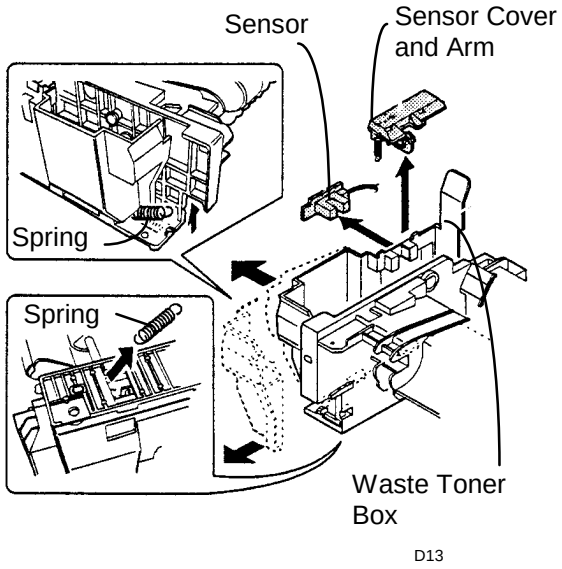


Figure 1. Removing the Toner Box

4. (Figure 2): Remove E-Ring and remove the Grounding Roller Assembly.

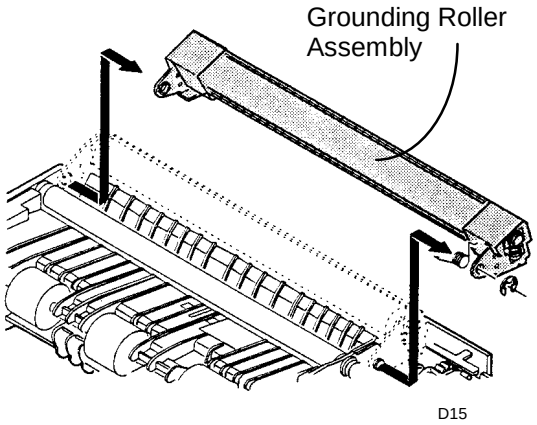


Figure 2. Removing the Grounding Roller Assembly

5. (Figure 3): Remove E-Rings and springs and remove the Grounding Roller.

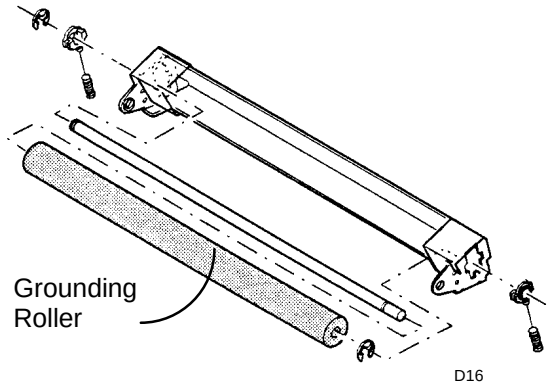


Figure 3. Removing the Grounding Roller

REPLACEMENT

NOTE: When reassembling the Grounding Roller Assembly, make sure it moves freely.

NOTE: When reassembling the Waste Toner Box, make sure it slides back and forth smoothly.

REP 8.10 UPPER REGISTRATION ROLLER

PARTS LIST ON PL 8.2

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Paper Guide (REP 8.1)
   b. Paper Feed Assembly (REP 8.2).
2. (Figure 1): Remove the Waste Toner Sensor cover and the Waste Toner Sensor.
3. Unhook the spring, slide it out the bottom, and remove the Waste Toner Box from the Paper Feed Assembly.

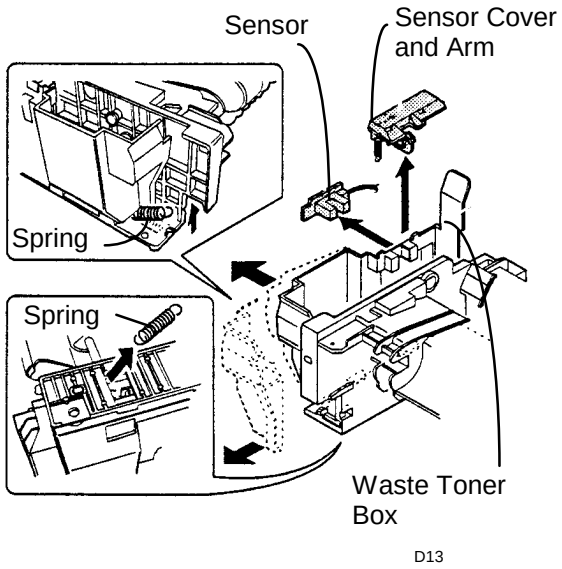


Figure 1. Removing the Toner Box

4. (Figure 2): Remove the Solenoids and Clutches shown. Keep the parts together. Be especially careful with the springs they are different.

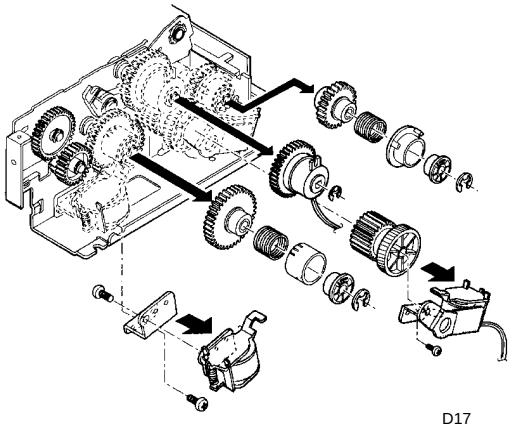


Figure 2. Removing the Clutches and Solenoids

5. (Figure 3): Remove the remaining hardware and remove the Right Feeder Frame.

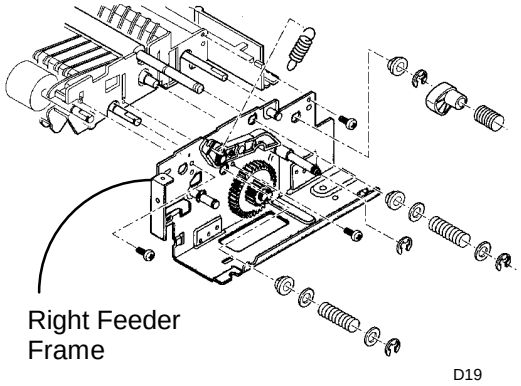


Figure 3. Removing the Feeder Frame

6. (Figure 4): Remove the E-Ring and Upper Registration Roller.

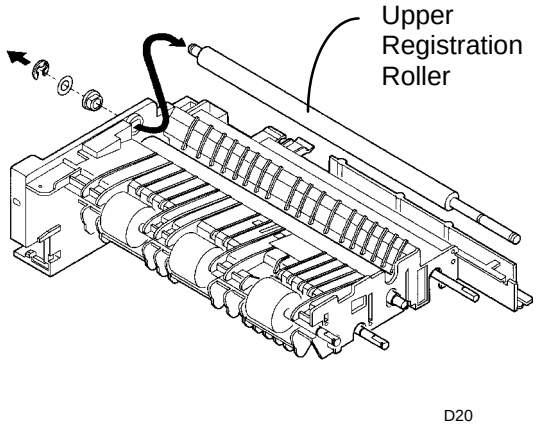


Figure 4. Removing the Upper Registration Roller

REPLACEMENT

NOTE: When reassembling the Waste Toner Box make sure it slides back and forth smoothly.

REP 8.11 LOWER REGISTRATION ROLLER

PARTS LIST ON PL 8.2

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Paper Guide (REP 8.1)
   b. Paper Feed Assembly (REP 8.2).
2. (Figure 1): Remove the Waste Toner Sensor cover and the Waste Toner Sensor.
3. Unhook the spring, slide it out the bottom, and remove the Waste Toner Box from the Paper Feed Assembly.

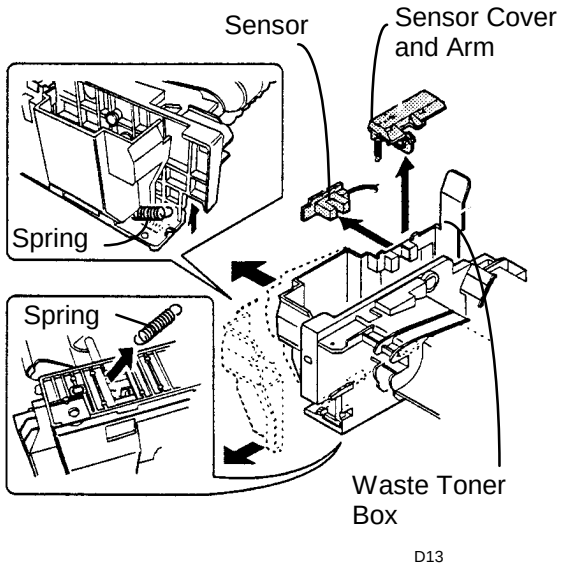


Figure 1. Removing the Toner Box

4. (Figure 2): Remove the Solenoids and Clutches shown. Keep the parts together. Be especially careful with the springs they are different.

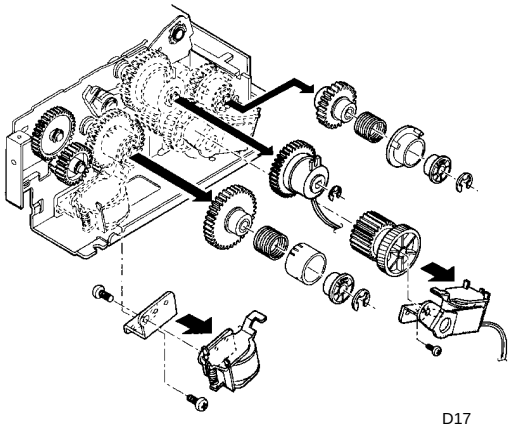


Figure 2. Removing the Clutches and Solenoids

5. (Figure 3): Remove the remaining hardware and remove the Right Feeder Frame.

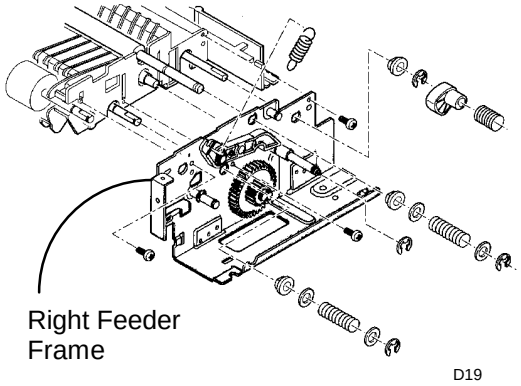


Figure 3. Removing the Feeder Frame

6. (Figure 4): Remove the Tension Lever and Remove the Lower Registration Roller.

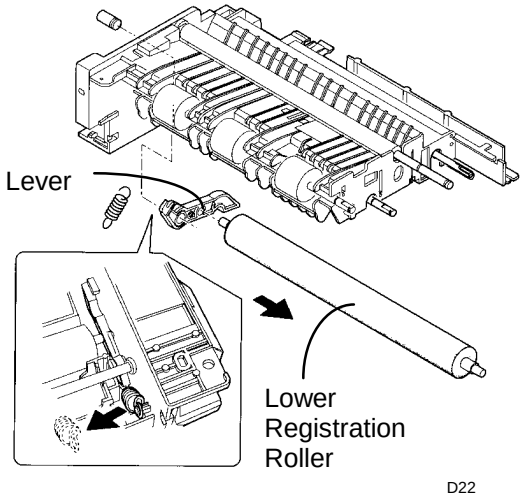


Figure 4. Removing the Lower Registration Roller

REPLACEMENT

NOTE: When reassembling the Waste Toner Box make sure it slides back and forth smoothly.

REP 8.12 FEED ROLLER

PARTS LIST ON PL 8.2

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Paper Guide (REP 8.1)
   b. Paper Feed Assembly (REP 8.2).
2. (Figure 1): Remove the Waste Toner Sensor cover and the Waste Toner Sensor.
3. Unhook the spring, slide it out the bottom, and remove the Waste Toner Box from the Paper Feed Assembly.

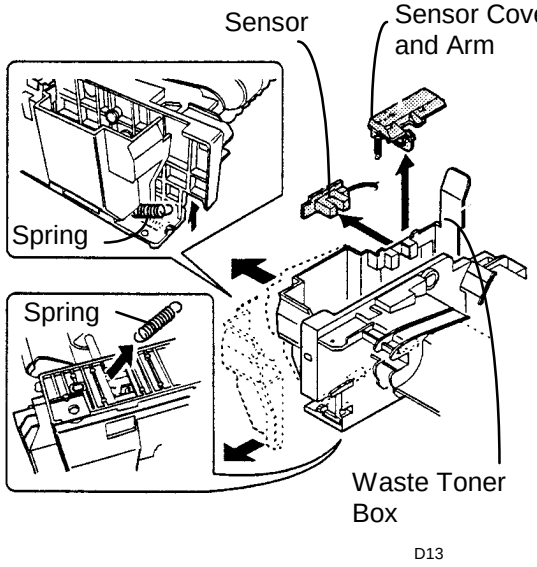


Figure 1. Removing the Toner Box

4. (Figure 2): Remove the Solenoids and Clutches shown. Keep the parts together. Be especially careful with the springs they are different.

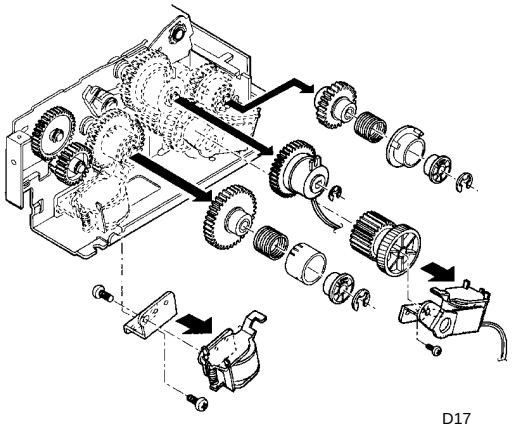


Figure 2. Removing the Clutches and Solenoids

5. (Figure 3): Remove the remaining hardware and remove the Right Feeder Frame.

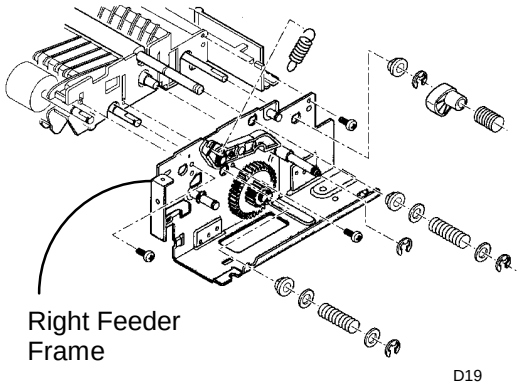


Figure 3. Removing the Feeder Frame

6. (Figure 4): Remove the E-Ring and Feed Roller.

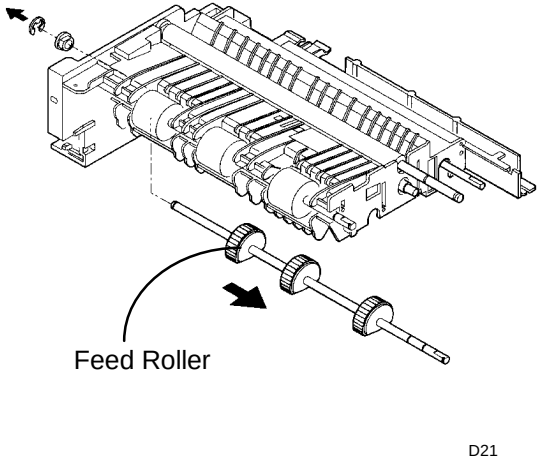


Figure 4. Removing the Feed Roller

REPLACEMENT

NOTE: When reassembling the Waste Toner Box make sure it slides back and forth smoothly.

REP 8.13 WASTE TONER SENSOR

PARTS LIST ON PL 8.1

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the following:
   a. Paper Guide (REP 8.1)
   b. Paper Feed Assembly (REP 8.2).
2. (Figure 1): Remove the Waste Toner Sensor cover and the Waste Toner Sensor.

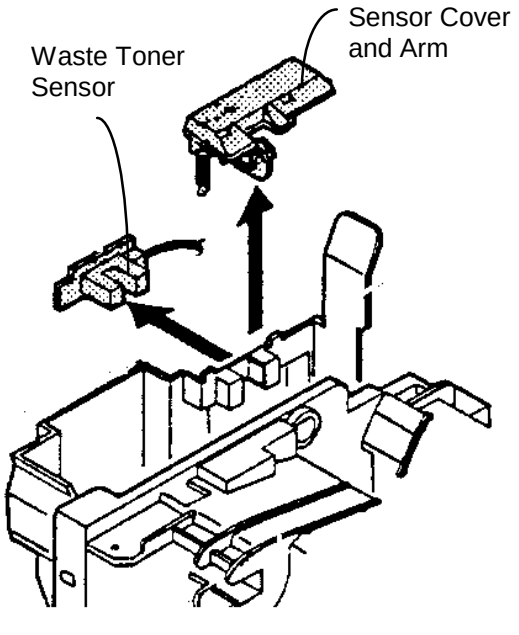


Figure 1. Removing the Waste Toner Sensor

REPLACEMENT

NOTE: When reassembling the Waste Toner Sensor and Cover make sure the arm slides back and forth smoothly

REP 9.1 STRIPPER FINGER ASSEMBLY

PARTS LIST ON PL 9.3

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Open the Printer.
2. (Figure 1): Remove the Fuser Assembly.
3. Place a sheet of paper between the Stripper Fingers and the Transfer Drum.

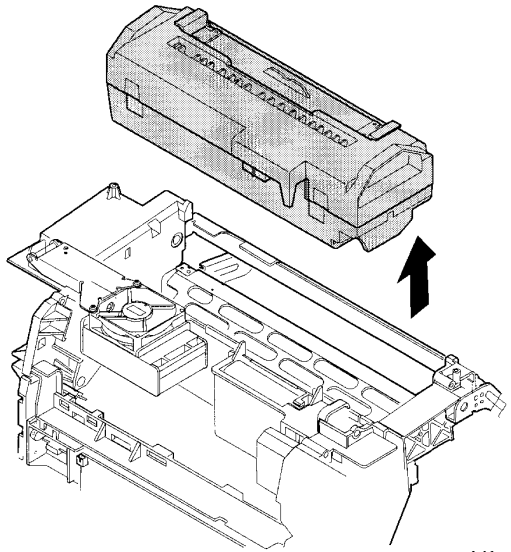


Figure 1. Removing the Fuser Assembly

4. (Figure 2): Remove the screw and remove the Spring Clip.
5. Remove the screw and remove the Stripper Arm.
6. Remove the Stripper Finger Assembly and the Transparency Jam Sensor Actuator.

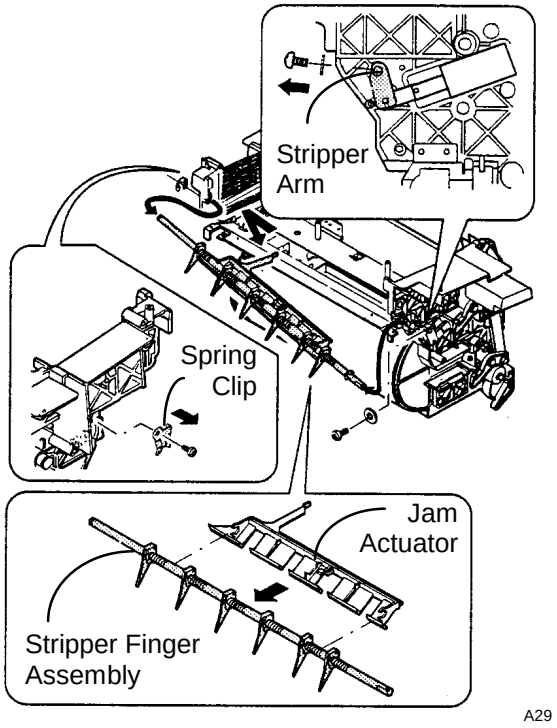


Figure 2. Removing the Stripper Finger Assembly

REPLACEMENT

NOTE: If the Transparency Sensor Jam Actuator comes off of the Stripper Finger Assembly, rotate the Stripper Arm and reinstall the actuator over the flats on the Stripper Shaft. Do not attempt to "snap" the actuator onto the shaft.

NOTE: When replacing the Transparency Sensor Jam Actuator, make sure it is blocking the Jam Sensor and moves freely.

NOTE: If you have difficulty reinstalling the Stripper Finger Assembly because of the Transparency Jam Sensor Actuator, remove the Transparency Jam Sensor, reinstall the Stripper Finger Assembly then reinstall the Transparency Jam Sensor. When reinstalling the Transparency Jam Sensor, raise the actuator and make sure the Transparency Jam Sensor Actuator is blocking the Transparency Jam Sensor. If you do not install the sensor correctly, a Drum Jam will occur at power on.

NOTE: Operate the Stripper Solenoid several times by hand and check the operation of the Stripper Fingers.

REP 9.2 TRANSFER DRUM CLEANING SOLENOID

PARTS LIST ON PL 9.1

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the Front Cover (REP 1.4).
2. (Figure 1): Remove the large E-Ring securing the Transfer Drum Assembly latch and slide the latch off the pin. This will allow access to the screw securing the Transfer Drum Cleaning Solenoid.

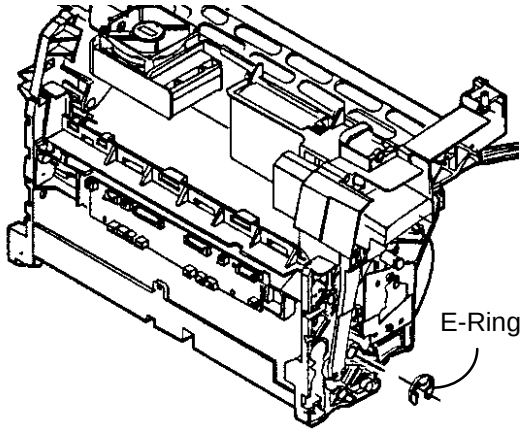


Figure 1. Removing the E-Ring

3. (Figure 2): Remove the screw and remove the Transfer Drum Cleaning Solenoid.

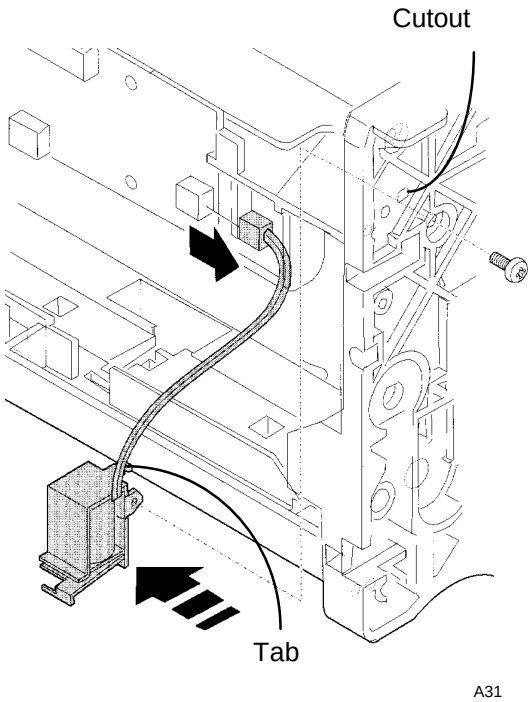


Figure 2. Removing the Transfer Drum Cleaning Solenoid

REPLACEMENT

NOTE: When reinstalling the Transfer Drum Cleaning Solenoid, make sure the tab on the solenoid is located in the cutout in the frame.

NOTE: Observe the Cleaner Assembly during the copy quality setup. When the Cleaning Solenoid is energized, the Cleaning Assembly should be cammed forward. When the Solenoid is deenergized, the Cleaning Assembly should be cammed away.

REP 9.3 TRANSFER DRUM CLEANER CLUTCH

PARTS LIST ON PL 9.4

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the Front Cover (REP 1.4).
2. Remove the Transfer Drum Cleaning Solenoid (REP 9.2).
3. (Figure 1): Remove the Spring Clip and E-Rings. The right E-Ring is very small.
4. Remove the right and left bearings.
5. Remove the E-Ring and large washer from the lower belt idler. Slide the lower belt off of the idler.
6. The Connector PWB is mounted to a plastic frame. This frame has a V-shaped extrusion which is mounted over the Cam Shaft. Push the V-shaped extrusion to the rear, pull the Cam Shaft toward the front and to the left and remove the Cam Shaft Assembly.
7. Remove the Transfer Drum Cleaning Clutch.

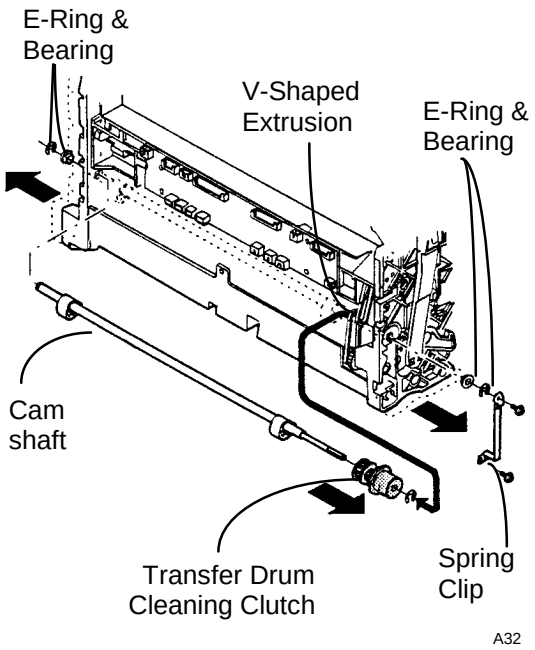


Figure 1. Removing the Transfer Drum Cleaner Clutch

REPLACEMENT

NOTE: (Figure 2): When reassembling the clutch, position the tab opposite the flat, then be sure to engage the spring in the sleeve cutout. If you are not sure of how to assemble the clutch or suspect a problem, replace the clutch with a new Transfer Drum Cleaner Clutch Assembly.

NOTE: Observe the Cleaner Assembly during the copy quality setup. When the Cleaning Solenoid is energized, the Cleaning Assembly should be cammed forward and the high point of the cam shaft should be pressing on the cleaner assembly. When the Solenoid is deenergized, the Cleaning Assembly should be cammed away and the low point of the cam shaft should be pressing on the cleaner assembly.

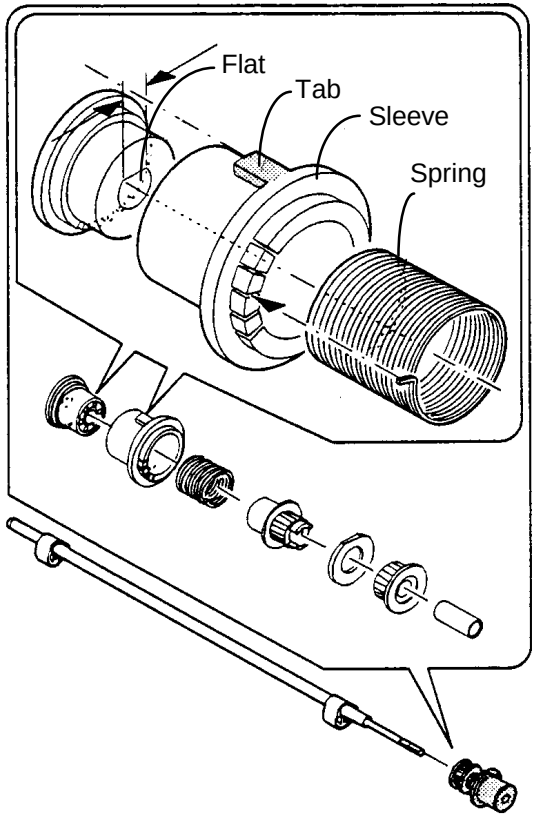


Figure 2. Assembling the Clutch

REP 9.4 TRANSFER DRUM CLEANER ASSEMBLY

PARTS LIST ON PL 9.4

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the Front Cover (REP 1.4).
2. Unhook the Transfer Drum cleaner return spring.
3. (Figure 1): Remove six screws.
4. Carefully pry the Transfer Drum Frame away from the lower frame and remove the Transfer Drum Lower Frame.

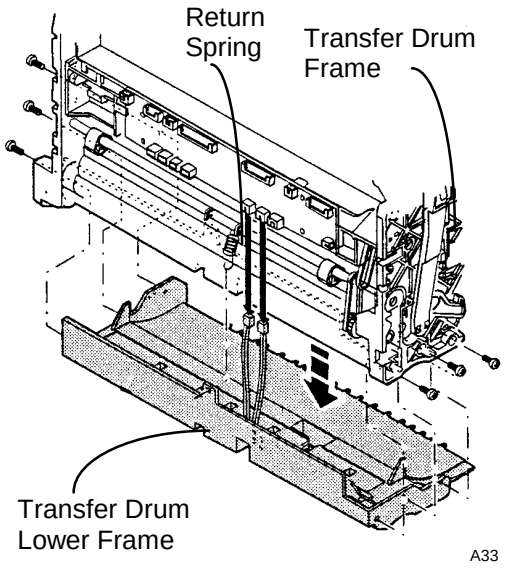


Figure 1. Removing the Transfer Drum Lower Frame

5. (Figure 2): Remove the Toner Shutter.
6. Remove the Transfer Drum Cleaner E-Ring.
7. Remove the E-Ring from the Cam Shaft.
8. Carefully pry the Transfer Drum Frames apart and remove the Transfer Drum Cleaner Assembly.

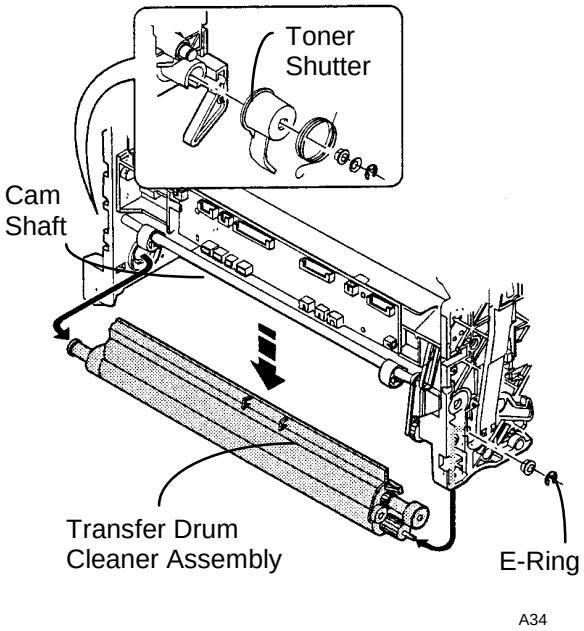


Figure 2. Removing the Transfer Drum Cleaner Assembly

REPLACEMENT

NOTE: When reinstalling the Transfer Drum Cleaner into the left frame be sure it is seated correctly. If it is not seated properly , you will not be able to install the E-Ring.

NOTE: (Figure 3): When Reinstalling the Transfer Drum Lower Frame, rotate the Transfer Drum Flange until the V-Shaped cutouts on the Transfer Drum Flanges are inserted in the V of the Lower Transfer Frame. The Transfer Drum Flanges do NOT rotate. When the Lower Frame is installed properly, the Transfer Drum Gear can be rotated in either direction and the Nip Adjustment Wheels will not rotate.

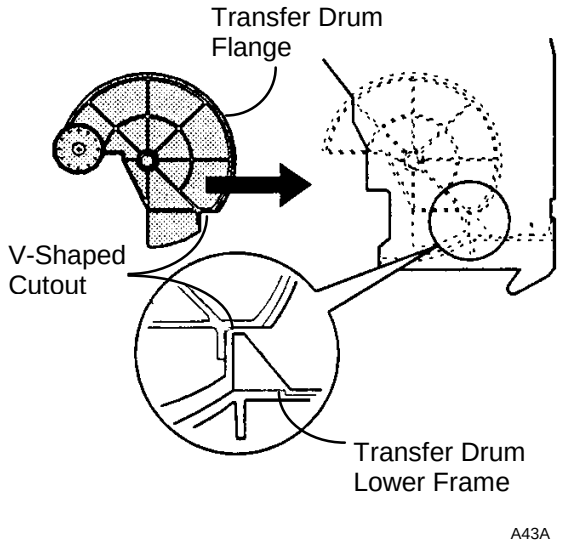


Figure 3. Reinstalling the Transfer Drum Lower Frame

REP 9.5 TRANSFER DRUM CLEANER BRUSH CLUTCH

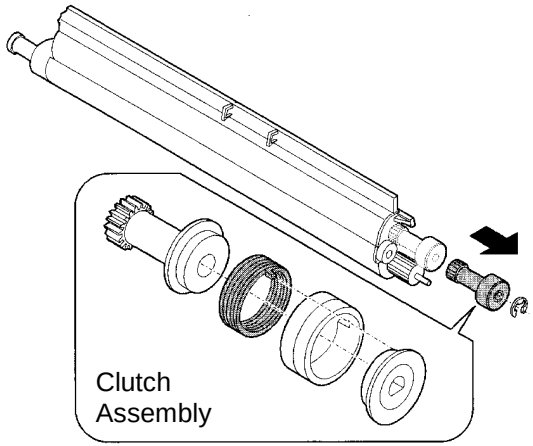
PARTS LIST ON PL 9.4

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the Front Cover (REP 1.4).
2. Remove the Transfer Drum Cleaner (REP 9.4).
3. (Figure 1): Remove the Transfer Drum Cleaner Brush Clutch.



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Figure 1. Removing the Transfer Drum Cleaner Brush Clutch

REPLACEMENT

NOTE: When reassembling the clutch, be sure to engage the spring in the sleeve cutout.

REP 9.6 TRANSFER DRUM CLEANING BLADE

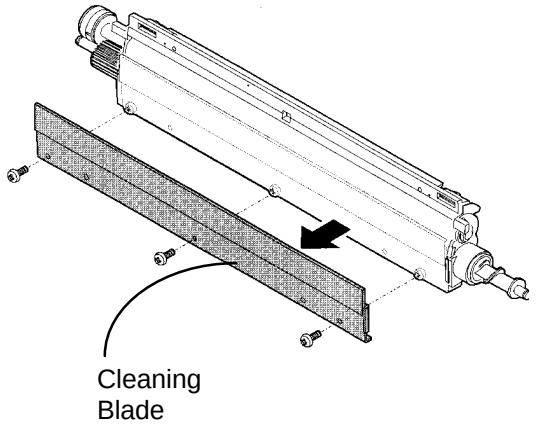
PARTS LIST ON PL 9.4

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the Front Cover (REP 1.4).
2. Remove the Transfer Drum Cleaner (REP 9.4).
3. (Figure 1): Remove the Transfer Drum Cleaning Blade.



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Figure 1. Removing the Transfer Drum Cleaning Blade

REP 9.7 TRANSFER DRUM CLEANING BRUSH

PARTS LIST ON PL 9.4

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the Front Cover (REP 1.4).
2. Remove the Transfer Drum Cleaner (REP 9.4).
3. (Figure 1): Remove the Transfer Drum Cleaner Brush Clutch.

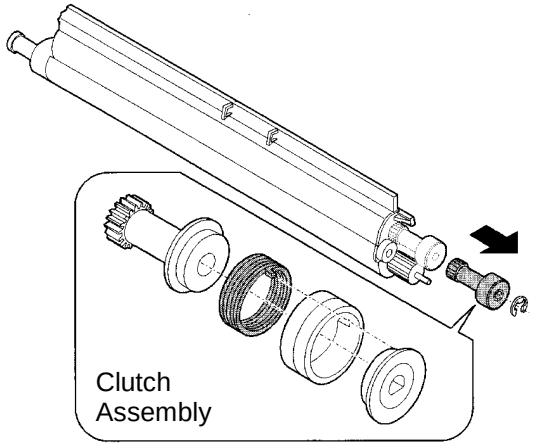


Figure 1. Removing the Transfer Drum Cleaner Brush Clutch

4. (Figure 2): Remove the Transfer Drum Cleaning Brush.

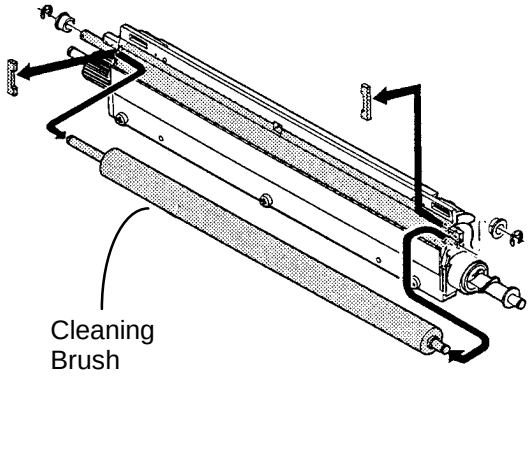


Figure 2. Removing the Transfer Drum Cleaning Brush

NOTES:

REP 9.8 TRANSFER DRUM

PARTS LIST ON PL 11.1

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

NOTE: You must replace the Transfer Drum Cleaning Blade when installing a new Transfer Drum. The blade can be easily accessed when the Transfer Drum is removed.

1. Remove the Front Cover (REP 1.4).
2. Remove the Drum Module.
3. Place several sheets of paper over the Paper Feeder.
4. Remove the Stripper Finger Assembly (REP 9.1).
5. (Figure 1): Remove the left side Arm and Spring.
6. Remove the Transfer Drum Mounting Plates.

NOTE: The left plate is spring loaded.

7. Slide the Transfer Drum Bearings out and remove the Transfer Drum.
8. Remove the Flanges and disassemble the Transfer Drum as required.

NOTE: When reinstalling the transfer drum be sure to reinstall the washer between the spring and E-Ring on the left side.

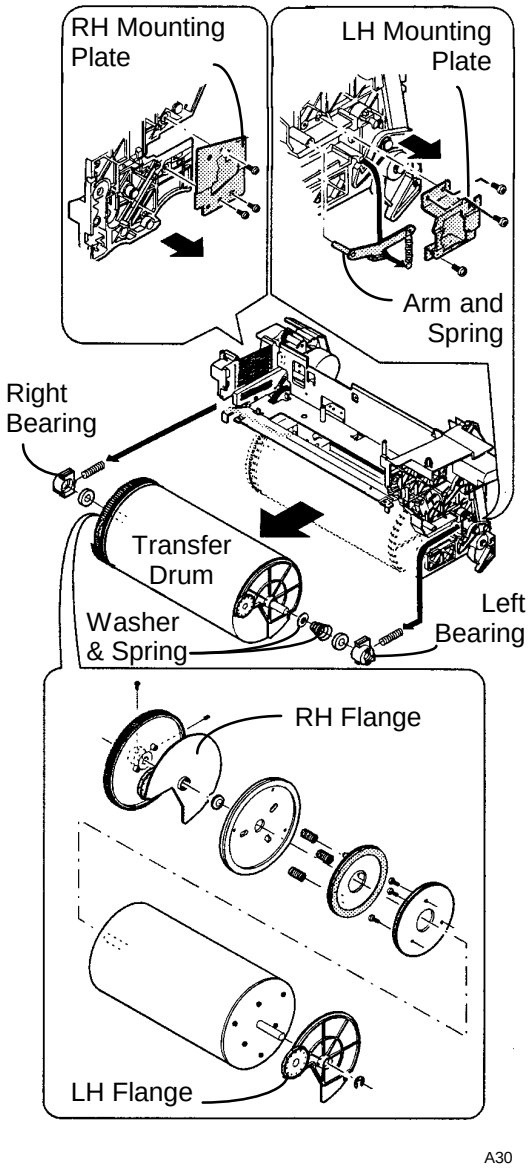


Figure 1. Removing the Transfer Drum

REPLACEMENT

NOTE: Before replacement, locate the V-Shaped cutouts on the transfer drum flanges and the V in the Transfer Drum Lower Frame.

NOTE: (Figure 2): When Reinstalling the Transfer Drum, rotate the Transfer Drum Flange until the V-Shaped cutouts on the Transfer Drum Flanges are inserted in the V of the Lower Transfer Drum Frame. The Transfer Drum Flanges do NOT rotate. When the Transfer Drum is installed properly, the Transfer Drum Gear can be rotated in either direction and the Nip Adjustment Wheels will not rotate.

1. Perform the Transfer Drum Nip check (ADJ 11.1).

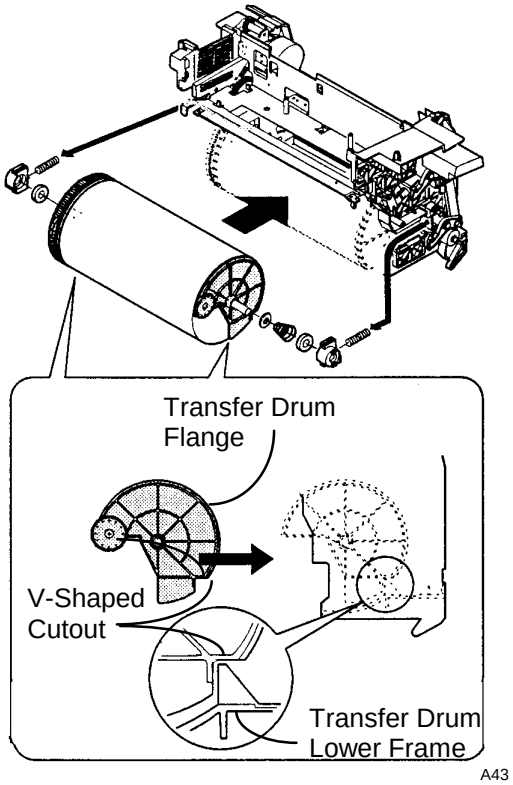


Figure 2. Reinstalling the Transfer Drum

REP 9.9 TRANSFER ASSEMBLY (TRANSFER CLAMSHELL)

PARTS LIST ON PL 10

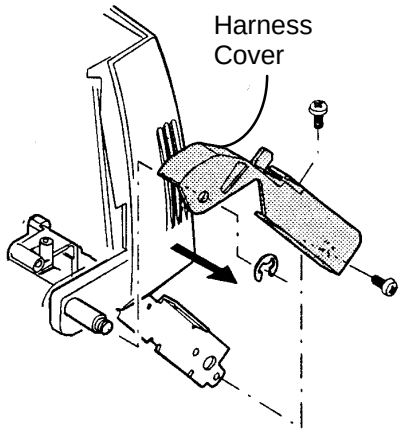
REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

NOTE: Be careful not to scratch the Transfer Drum.

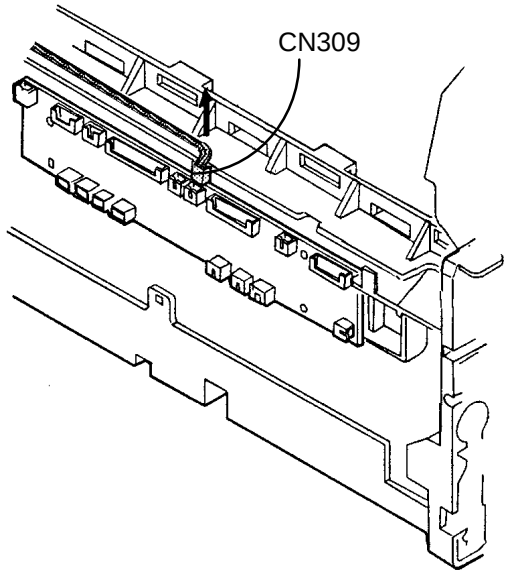
1. Remove the following:
   a. Front Cover (REP 1.4).
   b. Right and Left Side covers (REP 1.3).
   c. Print Drum (GP 1).
   d. Color Developer Assembly (GP 2).
   e. Black Developer Assembly (GP 3).
   f. Fuser (GP 5).
2. (Figure 1): Remove the two screws and the E-Ring and remove the Harness Cover.



T01

Figure 1. Removing the Harness Cover

3. Locate and disconnect the following:
   a. Fuser Motor Harness. This is a five wire harness which connects to the PCU PWB (CN110). You will have to pry open the Noise Suppressor around this harness and free the harness from the standoffs.
   b. Main Connector PWB Harness. This is a 28 wire harness which connects to the PCU PWB (CN103). You will have to free the harness from the standoffs.
   c. Fuser Connector. This is a two wire harness (White & Black, heavy gauge) which supplies AC to the Fuser. You will have to free the harness from the standoffs.
   d. Ground Wire. This wire provides a frame ground to the Transfer Assembly. Remove the Screw securing the wire to the Main Motor frame.
4. (Figure 2): Disconnect the three wire Oil Sensor connector (CN309) from the Connector PWB. Free the harness from wiring clips and cut any cable ties.



T02

Figure 2. Disconnecting the Oil Sensor

5. (Figure 3): Disconnect the three wire Exit Sensor connector (CN308) from the Connector PWB. Free the harness from the wiring clips and cut any cable ties.

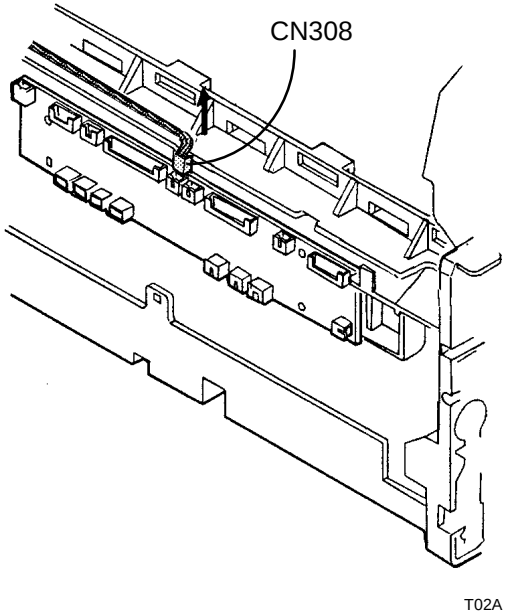


Figure 3. Disconnecting the Exit Sensor

6. (Figure 4): Remove the Right Pivot Arm:
   a. Remove the two E-Rings.
   b. Carefully close the Transfer Assembly and remove the spring.
   c. Carefully support the bottom of the Transfer Assembly and remove the Right Pivot Arm.

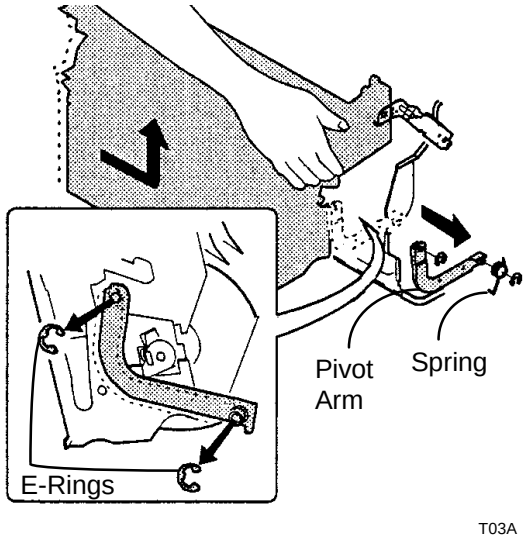


Figure 4. Removing the Right Pivot Arm

7. (Figure 5): Disconnect the Left Pivot Arm:
   a. Remove the E-Ring.
   b. Carefully support the bottom of the Transfer Assembly and Disconnect the Left Pivot Arm from the Pin.

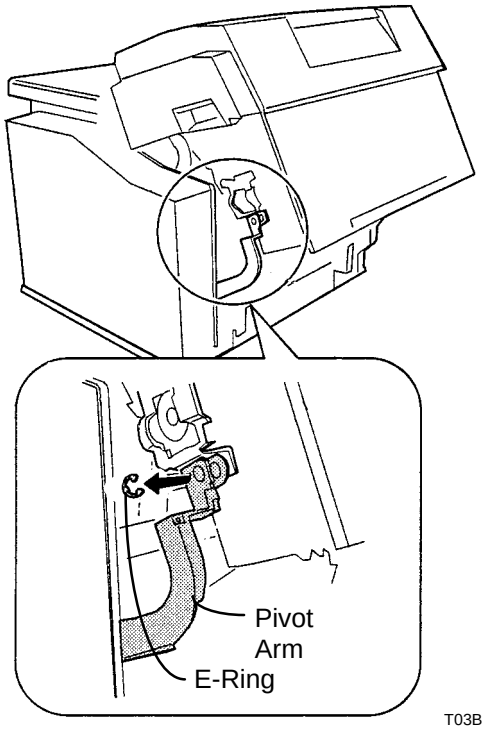


Figure 5. Disconnecting the Left Pivot Arm

8. (Figure 6): Remove the inner and outer E-Rings from the left side of the left transfer drum Pivot Pin.
9. Push the pin in slightly until you can remove the left side of the Exit assembly. Do not remove the pin at this time.
10. Locate the ground wire between the Exit Assembly and the Oil Sensor bracket. Remove the screw securing the ground wire to the Oil Sensor bracket.

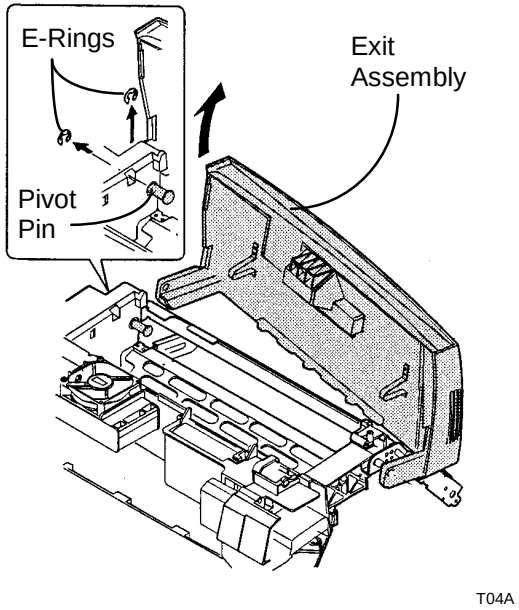


Figure 6. Removing the Left E-Rings

11. (Figure 7): Remove the outer E-Ring from the right side of the right transfer drum Pivot Pin.
12. Move the Exit Assembly to the right and remove the Inner E-Ring.
13. Push the pin in slightly until you can remove the right side of the Exit Assembly. Do not remove the pin at this time. Set the Exit Assembly aside.

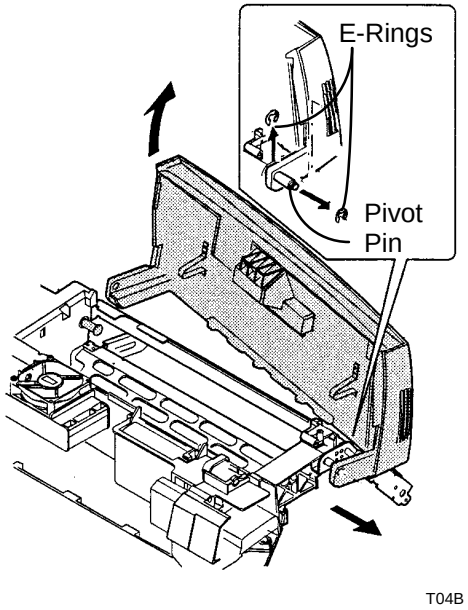


Figure 7. Removing the Right E-Rings

14. (Figure 8): Support the Transfer Drum Assembly and remove the two pins. Remove the Transfer Assembly.

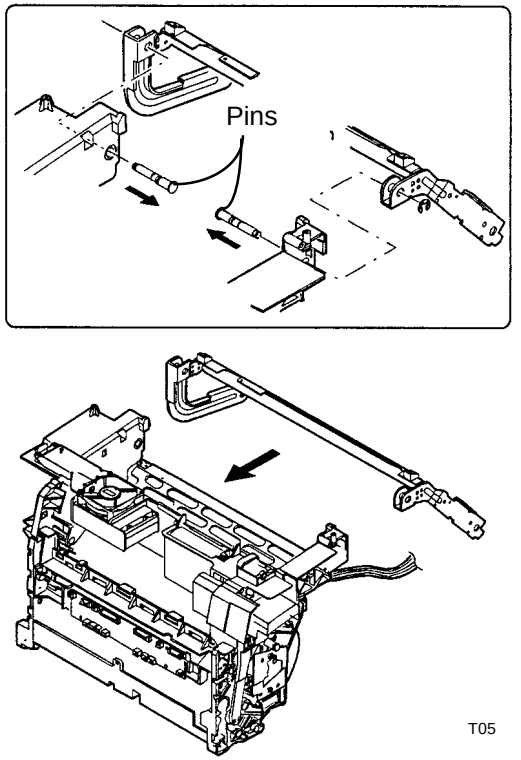


Figure 8. Removing the Pins and Transfer Assembly

REPLACEMENT

NOTE: The longer pin goes on the left side. The large E-Rings are used on the inside.

REP 10.1 BYPASS SWITCH

PARTS LIST ON PL 10.4

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the Front Cover (REP 1.4).
2. (Figure 1): Disconnect the connector and remove the Bypass Switch.

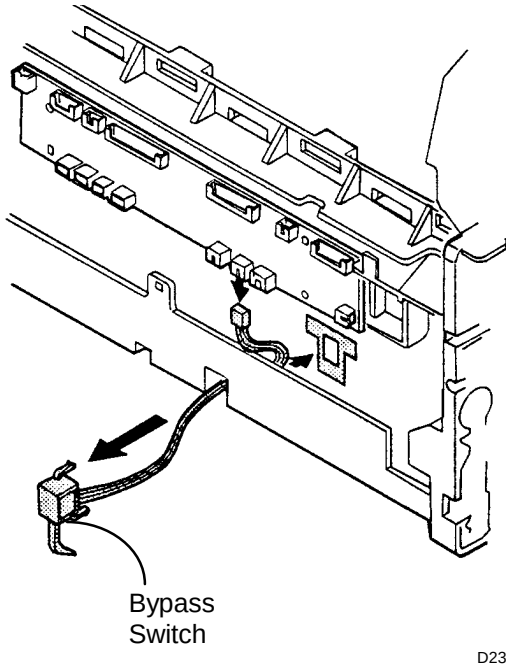


Figure 1. Removing the Bypass Switch

REP 10.2 TRANSFER DISCHARGE POWER SUPPLY

PARTS LIST ON PL 10.4

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the Front Cover (REP 1.4).
2. (Figure 1): Disconnect the connector, remove the screws, and remove the Transfer Discharge Power Supply.

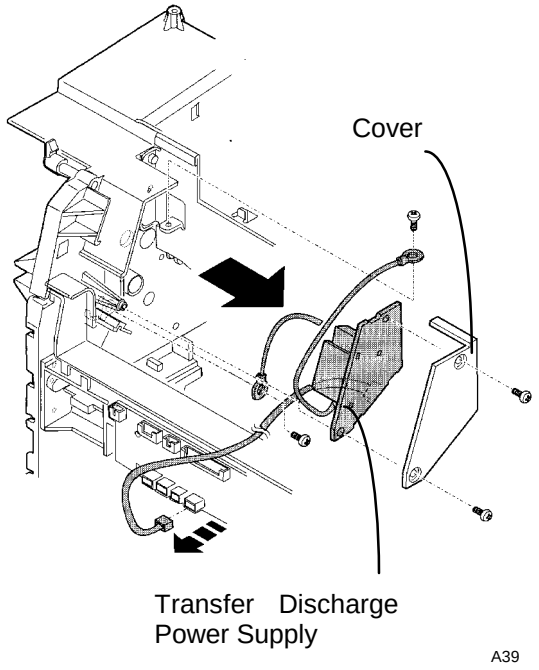


Figure 1. Removing the Transfer Discharge Power Supply

REP 10.3 TRANSPARENCY SENSOR

PARTS LIST ON PL 10.4 HARNESS

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the Front Cover (REP 1.4).
2. (Figure 1): Remove six screws.
3. Carefully pry the Transfer Drum Frame away from the lower frame and remove the Transfer Drum Lower Frame.

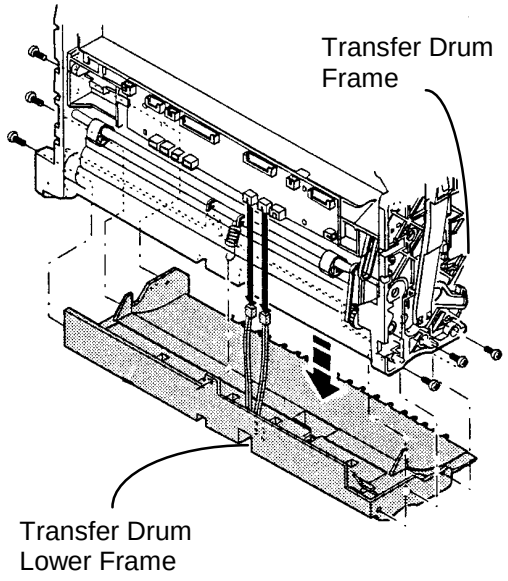


Figure 1. Removing the Transfer Drum Lower Frame

4. (Figure 2): Disconnect the connector and remove the Transparency Sensor.

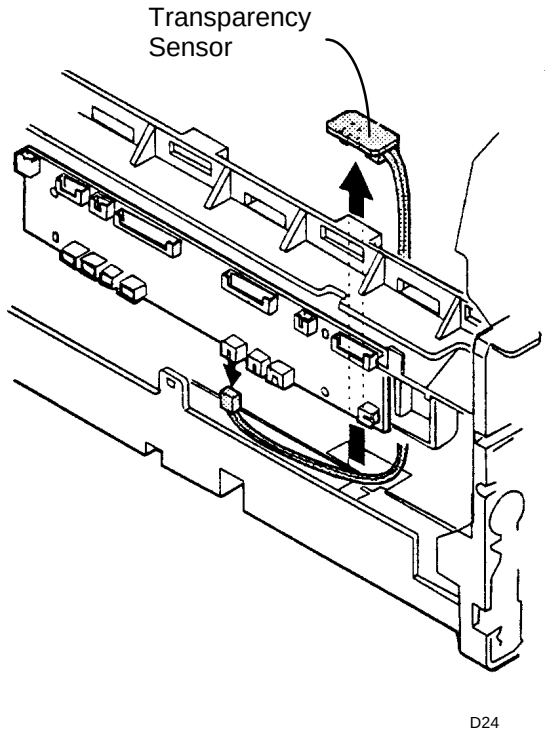


Figure 2. Removing the Transparency Sensor

REPLACEMENT

NOTE: (Figure 3): When Reinstalling the Transfer Drum Lower Frame, rotate the Transfer Drum Flange until the V-Shaped cutouts on the Transfer Drum Flanges are inserted in the V of the Lower Transfer Frame. The Transfer Drum Flanges do NOT rotate. When the Lower Frame is installed properly, the drum gear can be rotated in either direction and the nip adjustment wheels will not rotate.

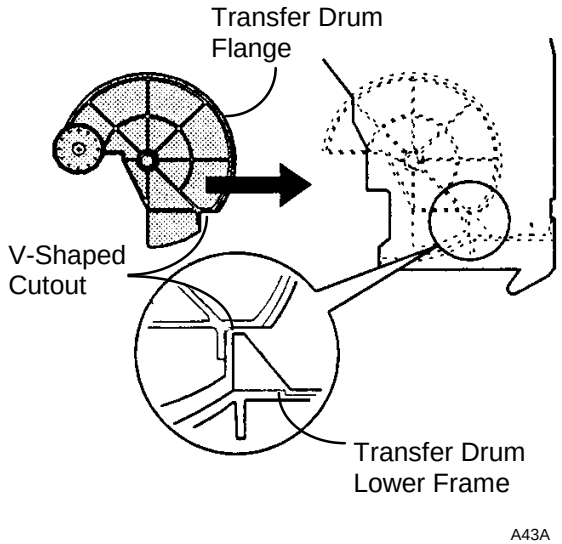


Figure 3. Reinstalling the Transfer Drum Lower Frame

REP 10.4 FUSER HARNESS

PARTS LIST ON PL 10.2

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the Front Cover (REP 1.4).
2. Remove the Right Side Cover (REP 1.3)
3. (Figure 1): Remove the Fuser Assembly.

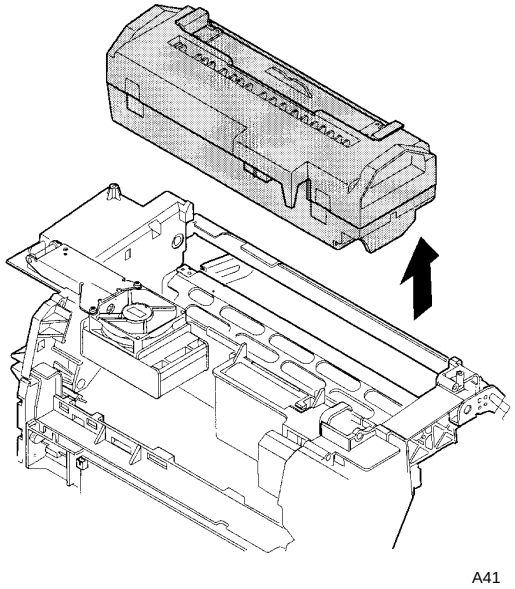


Figure 1. Removing the Fuser Assembly

4. (Figure 2): Remove the Harness Cover.
5. Disconnect the connectors and remove the Fuser Harness

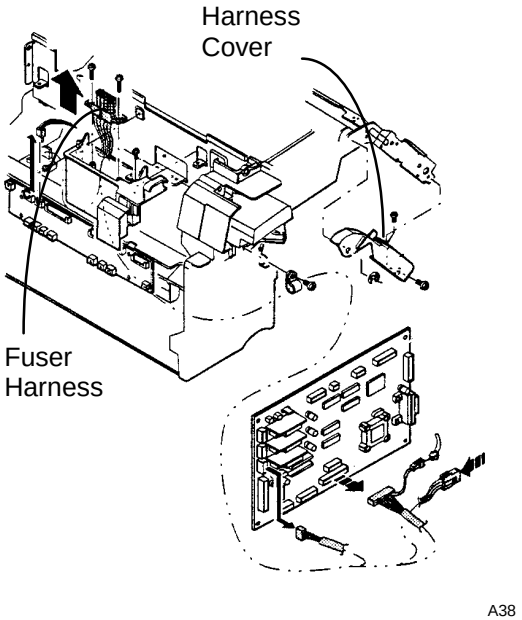


Figure 2. Removing the Fuser Harness

REP 12.1 ROS ASSEMBLY

PARTS LIST ON PL 12.1

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the Top Rear Cover (REP 1.1)
2. (Figure 1): Disconnect the connectors, remove the screws, and remove the ROS Assembly.

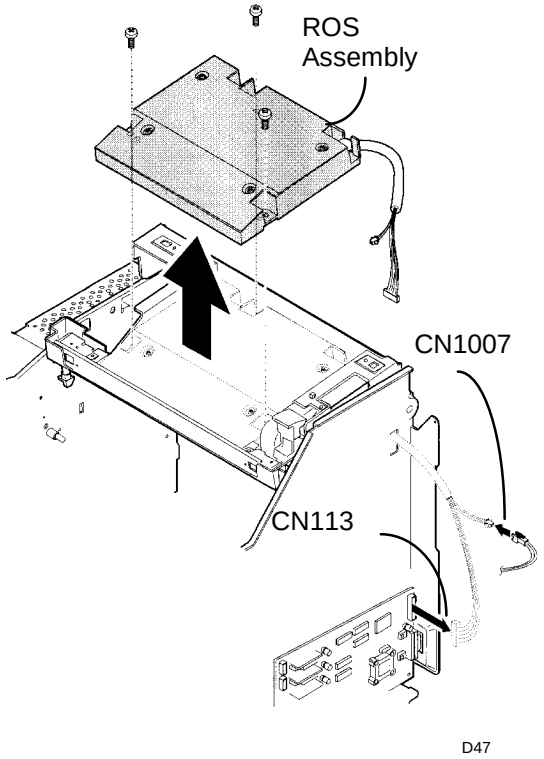


Figure 1. Removing the ROS

REP 13.1 BLACK TONER MOTOR

PARTS LIST ON PL 13.1

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. (Figure 1): Remove the following:
   a. Drum Module.
   b. Color Developer Module.
   c. Black Developer Module.

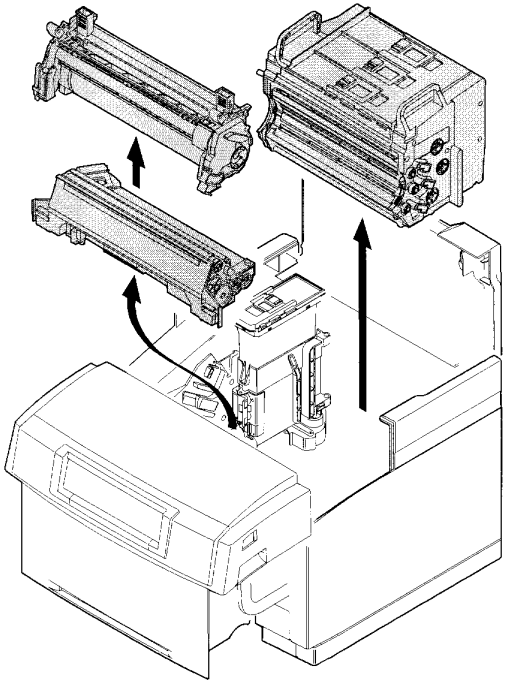


Figure 1. Removing the Modules

2. (Figure 2): Remove connectors, lift and remove the Black Toner Hopper.

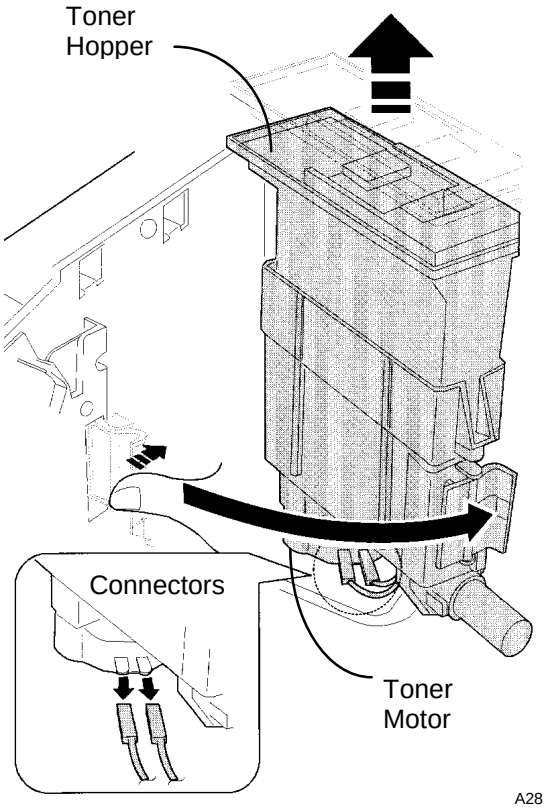


Figure 2. Removing the Toner Hopper

3. (Figure 3): Remove the screws and remove the Toner Motor.

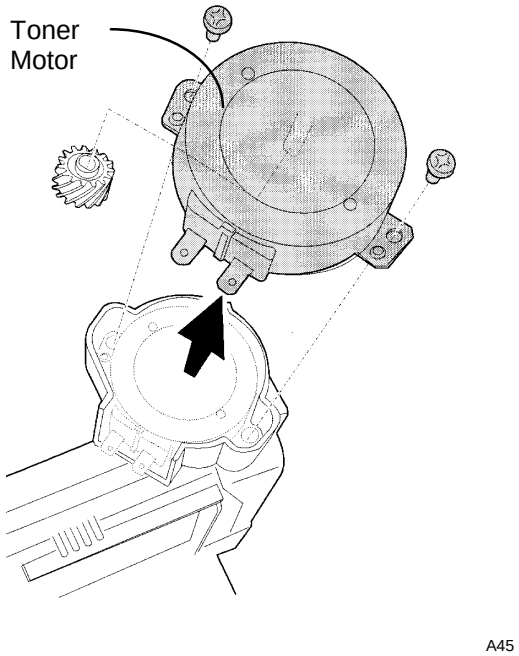


Figure 3. Removing the Toner Motor

REP 27.1 TRAY 2 MODULE

PARTS LIST ON PL 27.1

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

CAUTION

Three people are required to remove the printer from the Tray 2 Module.

1. (Figure 1): Remove the Tray 2 Module.
   a. Remove the Tray 2 Cassette.
   b. Disconnect the connector.
   c. Turn the screw clockwise to release the latches.
   d. Two persons should lift the printer from the Tray 2 Module while one person holds the screw clockwise.

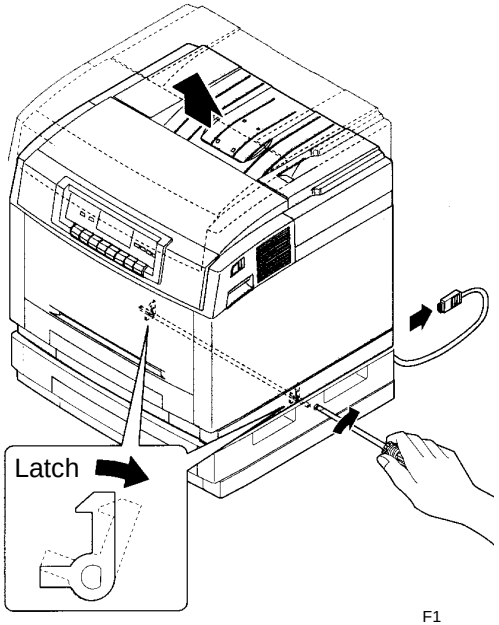


Figure 1. Removing the Tray 2 Module

REPLACEMENT

NOTE: (Figure 2): Before reinstalling the Tray 2 Module, press the lever several times to ensure that the Drive Gear raises when the lever is pressed.

When latching the Tray 2 Module, ensure that both latches are engaged.

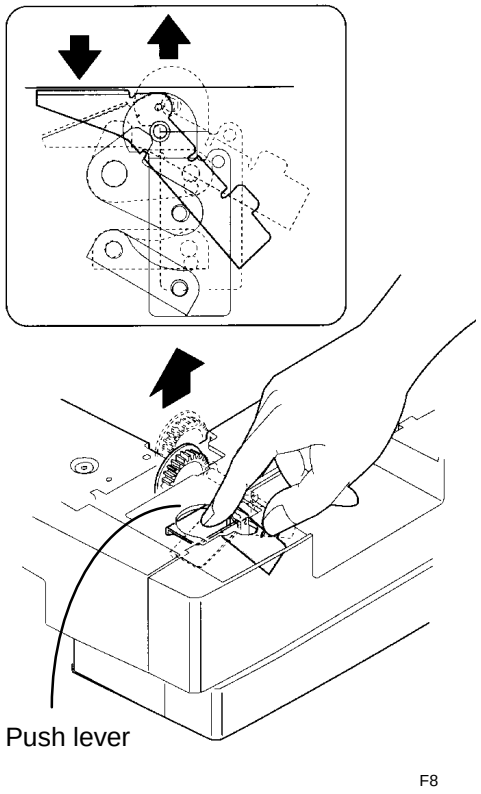


Figure 2. Reinstalling the Tray 2 Module

REP 27.2 TRAY 2 FEEDER ASSEMBLY

PARTS LIST ON PL 27.2

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the Tray 2 Module (REP 27.1).
2. (Figure 1): Remove the Tray 2 Paper Feed Assembly.
   a. Disconnect the connectors.
   b. Remove the screws and remove the Tray 2 Feeder Assembly.

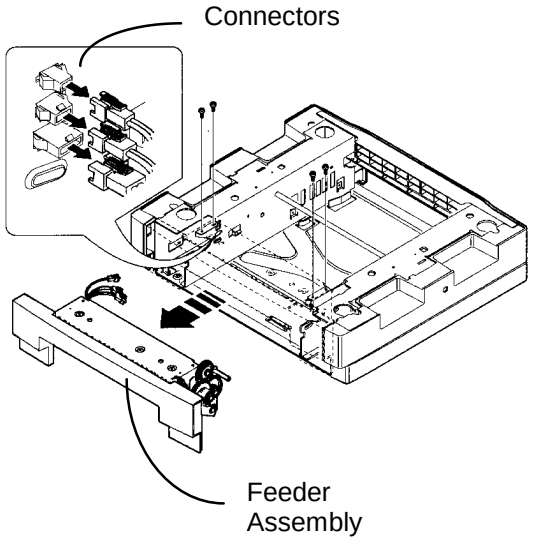


Figure 1. Removing the Tray 2 Feeder Assembly

REP 27.3 TRAY 2 CASSETTE PWB

PARTS LIST ON PL 27.1

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the Tray 2 Module (REP 27.1).
2. (Figure 1): Remove the Tray 2 Cassette PWB.
   a. Remove the Tray 2 Rear Cover.
   b. Disconnect the connectors.
   c. Remove the screws and remove the Tray 2 Feeder Assembly.

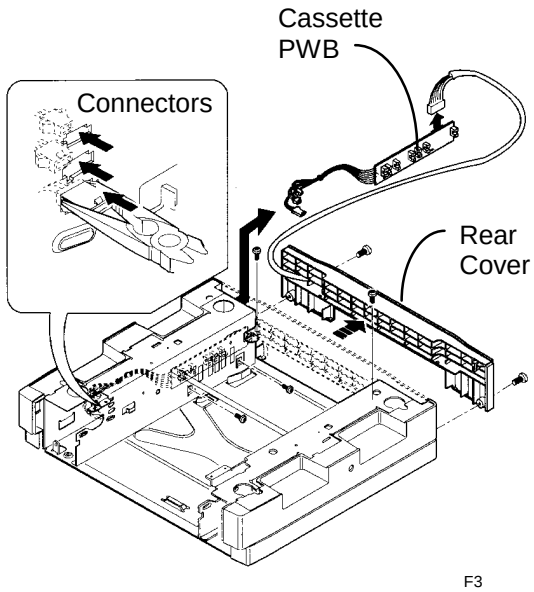


Figure 1. Removing the Tray 2 Cassette PWB

REP 27.4 TRAY 2 TRAY EMPTY SENSOR

PARTS LIST ON PL 27.2

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the Tray 2 Module (REP 27.1).
2. (Figure 1): Remove the screws and remove the Tray 2 Empty Sensor.

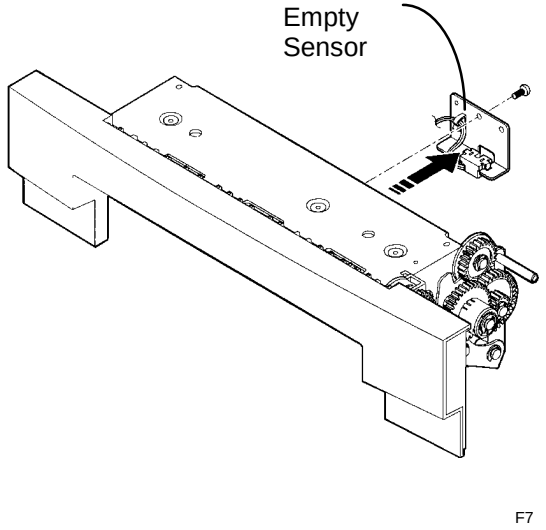


Figure 1. Removing the Tray 2 Empty Sensor

REP 27.5 TRAY 2 FEED SOLENOID AND FEED CLUTCH

PARTS LIST ON PL 27.3

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the Tray 2 Module (REP 27.1).
2. (Figure 1): Remove the Tray 2 Feed Solenoid.
3. Remove the Tray 2 Feed Clutch.

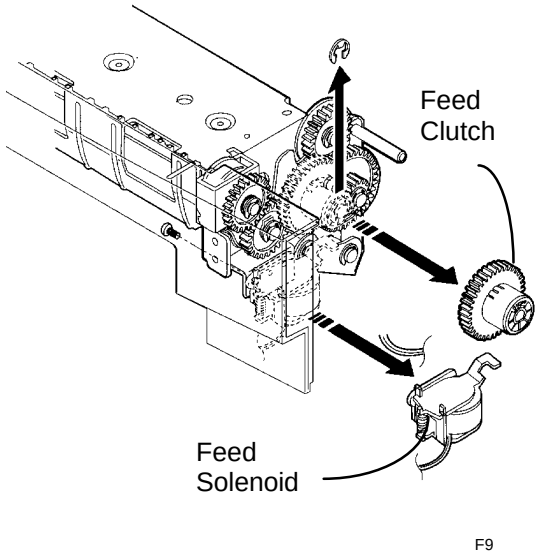


Figure 1. Removing the Tray 2 Feed Solenoid and Feed Clutch

REPLACEMENT

NOTE: After assembling the components, hand crank the feeder through several cycles. Energize the Feed Solenoid several times by hand and check that the Feed Solenoid engages the Feed Clutch and stops the rollers in the "flat down" position.

REP 27.6 TRAY 2 FEED ROLLERS

PARTS LIST ON PL 27.2

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the Tray 2 Module (REP 27.1).
2. Remove the Tray 2 Feed Solenoid and Feed Clutch (REP 27.5).
3. (Figure 1): Remove the Tray 2 Feed Rollers.

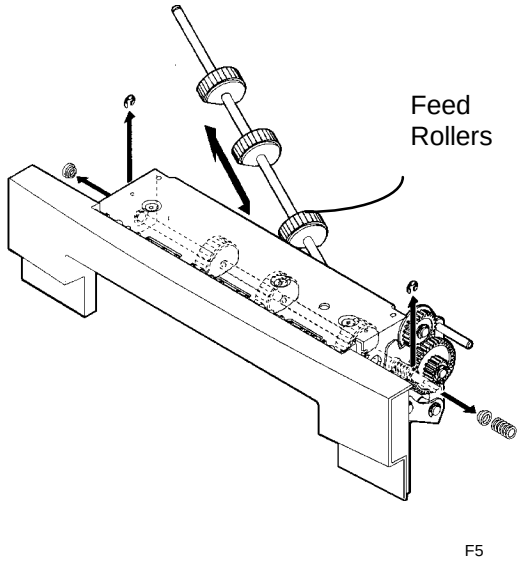


Figure 1. Removing the Tray 2 Feed Rollers

REP 27.7 TRAY 2 DRIVE ROLLER AND DRIVE CLUTCH

PARTS LIST ON PL 27.3

REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the Tray 2 Module (REP 27.1).
2. Remove the Tray 2 Feed Solenoid and Feed Clutch (REP 27.5).
3. (Figure 1): Remove the Tray 2 Drive Clutch.

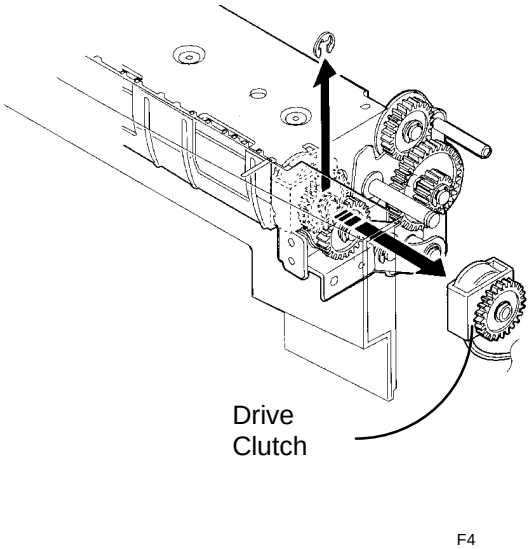


Figure 1. Removing the Tray 2 Drive Clutch

4. (Figure 2): Remove the Tray 2 Drive Roller.

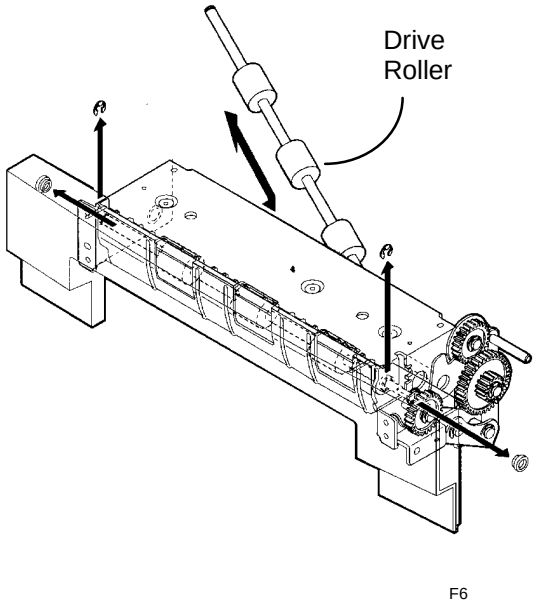


Figure 2. Removing the Tray 2 Drive Roller

ADJ 3.1.1 DENSITY AND COLOR BALANCE (C55/C55mp)

PURPOSE:

To adjust the Density and Color Balance of the print generated by the ESS.

This procedure actually consists of three adjustments.

ADJ 3.1.1A Color Density (C55/C55mp)
ADJ 3.1.1B Black Density (C55/C55mp)
ADJ 3.1.1C Color Balance (C55/C55mp)

CHECK:

NOTE: Do Not make changes in the Density or the Color Balance without first consulting the customer. The customer may have altered the balance in the print drivers to achieve specific results with their documents.

NOTE: It is often difficult to detect changes when performing this procedure. You may find it helpful to first run the Printer Diagnostic test pattern (SERVICE, TEST PATTERNS, DIAGNOSTICS). Once the adjustments have been made, run another diagnostics pattern and compare it to the first. Expect to see the following:

Color Density adjustment; changes the Cyan, Magenta, and Yellow, Density Rate Setpoints and Developer Bias equally.

Black Density adjustment; changes the Black Density Rate Setpoint and Developer Bias.

Color Balance adjustment changes the Cyan, Magenta, and Yellow Density Rate Setpoints and Developer Bias depending on the amount and direction of change.

Run a print of the Color Balance Test Pattern (SERVICE, TEST PATTERNS, PATTERN TYPE, PCL, COLOR BALANCE.

1. (Figure 1): Examine the existing density and color balance with the customer.
2. If adjustment is required, refer to the appropriate procedure.

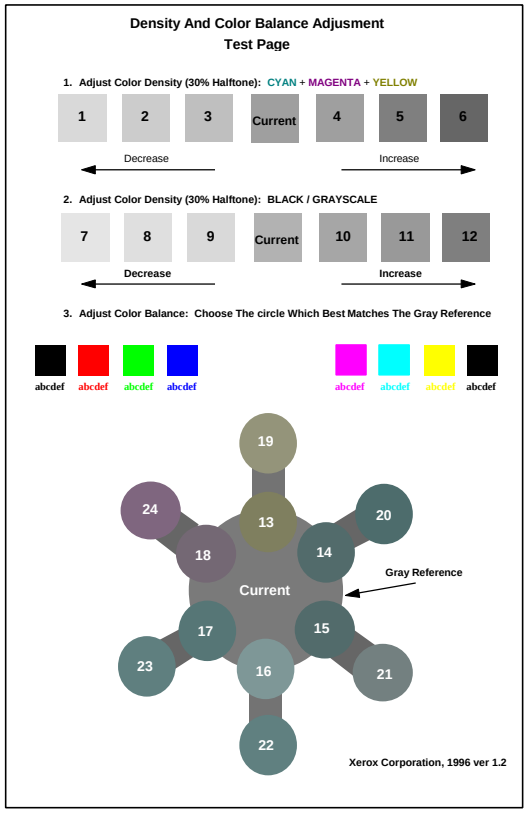


Figure 1. Density and Color Balance Test Pattern

ADJ 3.1.1A Color Density (C55/C55mp)

CHECKING THE COLOR DENSITY

1. Press **On Line** to put the printer in the Off Line mode.
2. Press **Menu**.
3. Press **Next** until <SETUP > is displayed. Press **Enter**.
4. When <COLOR ADJUST> is displayed press **Enter**.
5. Analyze the test page and choose the number which represents the Color Density the customer desires. Keep in mind that this is a 30% gray. Darker is not always better.

ADJUSTING THE COLOR DENSITY

1. Perform the Color Density Check.
2. Press **Next** until <COLOR DENSITY> is displayed. Press **Enter**.
3. When <CHOOSE NUMBER> is displayed, press **Enter**.
4. Use **Next/Previous** to change the numerical setting.
5. Press **Enter**.
6. Confirm the change.
7. Analyze the test page and determine if additional adjustment is required.
8. Press **Next** until OK ALL CHANGES is displayed, then press **Enter**.
9. Press **On Line** to return the printer to the On Line mode.

ADJ 3.1.1B Black Density (C55/C55mp)

CHECKING THE BLACK DENSITY

1. Press **On Line** to put the printer in the Off Line mode.
2. Press **Menu**.
3. Press **Next** until <SETUP > is displayed. Press **Enter**.
4. When <COLOR ADJUST> is displayed press **Enter**.
5. Analyze the test page and choose the number which represents the Black Density the customer desires. Keep in mind that this is a 30% gray. Darker is not always better.

ADJUSTING THE BLACK DENSITY

1. Perform the Black Density Check.
2. Press **Next** until <BLACK DENSITY> is displayed. Press **Enter**.
3. When <CHOOSE NUMBER> is displayed, press **Enter**.
4. Use **Next/Previous** to change the numerical setting.
5. Press **Enter**.
6. Confirm the change.
7. Analyze the test page and determine if additional adjustment is required.
8. Press **Next [6]** until OK ALL CHANGES is displayed, then press **Enter [7]**.
9. Press **On Line [0]** to return the printer to the On Line mode.

ADJ 3.1.1C Color Balance (C55/C55mp)

CHECKING THE COLOR BALANCE

1. Press **On Line** to put the printer in the Off Line mode.
2. Press **Menu**.
3. Press **Next** until <SETUP > is displayed. Press **Enter**.
4. When <COLOR ADJUST> is displayed press **Enter**.
5. Analyze the test page and choose the number which represents the Color Balance the customer desires.

ADJUSTING THE COLOR BALANCE

1. Perform the Color Balance Check.
2. Press **Next** until <COLOR BALANCE> is displayed. Press **Enter**.
3. When <CHOOSE NUMBER> is displayed, press **Enter**.
4. Use **Next/Previous** to change the numerical setting.
5. Press **Enter**.
6. Confirm the change.
7. Analyze the test page and determine if additional adjustment is required.
8. Press **Next** until OK ALL CHANGES is displayed, then press **Enter**.
9. Press **On Line** to return the printer to the On Line mode.

ADJ 3.1.2 DENSITY AND COLOR BALANCE [NC60]

PURPOSE:

To adjust the Density and Color Balance of the print generated by the ESS.

This procedure actually consists of three adjustments.

ADJ 3.1.2A Color Density [NC60]
ADJ 3.1.2B Black Density [NC60]
ADJ 3.1.2C Color Balance [NC60]

CHECK:

NOTE: On the NC60, you must disconnect all input ports from the ESS before performing this adjustment.

NOTE: Do Not make changes in the Density or the Color Balance without first consulting the customer. The customer may have altered the balance in the print drivers to achieve specific results with their documents.

*NOTE: It is often difficult to see changes in the color balance. Changes will show in the values under **Density Rate Setpoints and Developer Bias**.*

Color Density adjustment; changes the Cyan, Magenta, and Yellow, Density Rate Setpoints and Developer Bias equally.

Black Density adjustment; changes the Black Density Rate Setpoint and Developer Bias.

Color Balance adjustment changes the Cyan, Magenta, and Yellow Density Rate Setpoints and Developer Bias depending on the amount and direction of change.

Run a print of the Color Balance Test Pattern (**Menu Down** until Color Adjust then press **Item Down**).

1. (Figure 1): Examine the existing density and color balance with the customer.
2. If adjustment is required, refer to the appropriate procedure.

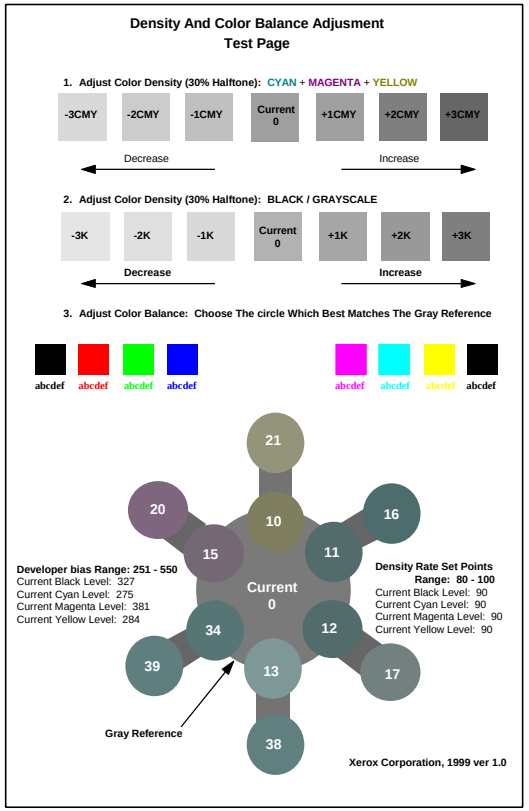


Figure 1. Density and Color Balance Test Pattern NC60

ADJ 3.1.2A Color Density [NC60]

CHECKING THE COLOR DENSITY

1. Run a print of the Color Balance Test Pattern (**Menu Down** until Color Adjust then press **Item Down**).
2. Analyze the test page and choose the number which represents the Color Density the customer desires. Keep in mind that this is a 30% gray. Darker is not always better.

ADJUSTING THE COLOR DENSITY

1. Perform the Color Density Check.
2. Press **Item Up** until Color Density is displayed.
3. Press **Value Up** or **Value Down** to change the numerical setting.
4. Press **Enter**.
5. Analyze the test page and determine if additional adjustment is required.
6. Press **On Line**.

ADJ 3.1.2B Black Density [NC60]

CHECKING THE BLACK DENSITY

1. Run a print of the Color Balance Test Pattern (**Menu Down** until Color Adjust then press **Item Down**).
2. Analyze the test page and choose the number which represents the Black Density the customer desires. Keep in mind that this is a 30% gray. Darker is not always better.

ADJUSTING THE BLACK DENSITY

1. Perform the Black Density Check.
2. Press **Item Up** until Black Density is displayed.
3. Press **Value Up** or **Value Down** to change the numerical setting.
4. Press **Enter**.
5. Analyze the test page and determine if additional adjustment is required.
6. Press **On Line**.

ADJ 3.1.2C Color Balance [NC60]

CHECKING THE COLOR BALANCE

1. Run a print of the Color Balance Test Pattern (**Menu Down** until Color Adjust then press **Item Down**).
2. Analyze the test page and choose the number which represents the Color Balance the customer desires

ADJUSTING THE COLOR BALANCE

1. Perform the Color Balance Check.
2. Press **Item Up** until Color Balance is displayed.
3. Press **Value Up** or **Value Down** to change the numerical setting.
4. Press **Enter**.
5. Analyze the test page and determine if additional adjustment is required.
6. Press **On Line**.

ADJ 3.2.1 MARGINS (SIDE-TO SIDE and TOP-TO-BOTTOM) (C55/C55mp)

PURPOSE:

To adjust the top and left margins (with respect to a portrait page) using the Control Panel.

CHECK:

1. Run a print of Test Pattern A.
   a. Put the printer in the Off Line mode by pressing the **On Line** button.
   b. Press **Menu** and then use the **Previous/Next** buttons to scroll to SERVICE. Press **Enter**.
   c. When TEST PATTERNS is displayed, press **Enter**.
   d. Use **Previous/Next** to scroll to PATTERN TYPE. Press **Enter**.
   e. When PCL is displayed, press **Enter**.
   f. When TEST PATTERN A is displayed, press **Enter**.
   g. Use **Previous/Next** to scroll to RUN TEST JOB. Press **Enter**.
   h. When YES is displayed press **Enter** to print Test Pattern A.
2. Figure 1: Measure the Margins.
   a. The distance from the Lead Edge of the copy paper to the 8 mm line should be 8 mm.
   b. The distance from the Side Edge of the copy paper to the 8 mm line should be 8 mm.

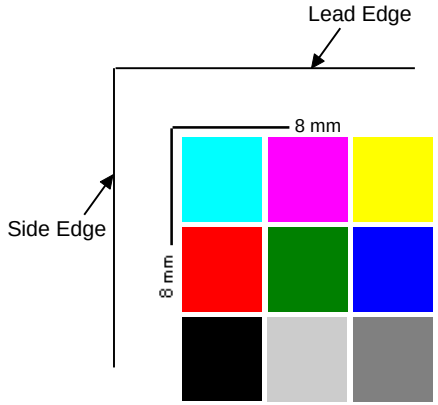


Figure 1. Margins Measurement

ADJUSTMENT:

1. Access the adjustment menu.
   a. Put the printer in the Off Line mode by pressing the **On Line** button.
   b. Press **Menu** and then use the **Previous/Next** buttons to scroll to SERVICE. Press **Enter**.
   c. Use **Previous/Next** to scroll to ADJUSTMENTS. Press **Enter**.
   d. Use **Previous/Next** to scroll to LEFT MARGIN OR TOP MARGIN. Press **Enter**.
   e. Use **Previous/Next** to change the margin value (+) increases the margin (–) decreases the margin. The value can be varied ± 4 mm. Press **Enter** when the adjustment is complete.
2. Perform the CHECK.

ADJ 3.2.2 MARGINS (SIDE-TO-SIDE and TOP-TO-BOTTOM) [NC60]

PURPOSE:

To adjust the top and left margins (with respect to a portrait page) using the Control Panel.

CHECK:

1. Run a print of Test Pattern A.
   a. Press **Menu Up** until Service is displayed.
   b. Press **Item Down** until Test Patterns is displayed.
   c. Press **Value Up** until Pattern A is displayed, press **Enter**.
2. Figure 1: Measure the Margins.
   a. The distance from the Lead Edge of the copy paper to the 8 mm line should be 8 mm.
   b. The distance from the Side Edge of the copy paper to the 8 mm line should be 8 mm.

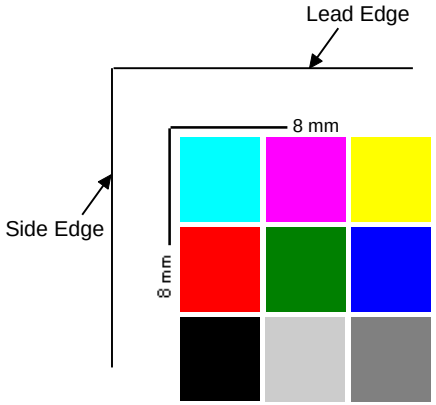


Figure 1. Margins Measurement

ADJUSTMENT:

1. Access the adjustment menu.
   a. Press **Menu Up** until Service is displayed.
   b. Press **Item Down** until Margin Left or Margin Top is displayed.
   c. Press **Value Up** to change the margin value (+) increases the margin (–) decreases the margin. The Left value can be varied +10 to –5 mm. The Top value can be varied +10 to –3. Press **Enter** when the adjustment is complete.
2. Perform the CHECK.

ADJ 3.3 NVM INITIALIZE (U2)

PURPOSE:

To obtain the consumable usage and toner concentration values stored in NVM. These values are needed before initializing the Non-Volatile Memory or installing a new PCU PWB.

NOTE: Before initializing the NVM or replacing the PCU PWB, you must obtain the consumable usage and toner concentration setpoints. The usage and setpoints must be reentered after initializing the NVM or replacing the PWB.

This procedure actually consists of two adjustments.

ADJ 3.3A Determining The Consumable Usage And Toner Concentration Values

ADJ 3.3B Initializing the NVM

ADJ 3.3A DETERMINING THE CONSUMABLE USAGE AND TONER CONCENTRATION VALUES

1. Locate the Service Log and obtain the copy of the Printer Diagnostic Test Pattern. Note the location of the Toner Concentration setpoints, the Consumable Usage Status and the Print Counts. These are the most critical NVM values.
2. Ask the customer if they have replaced any of the CRUs since the last service call.

NOTE 1: If the CRUs have not been replaced since the last service call, the Toner Concentration Setpoints on the Diagnostic sheet are probably correct for the CRUs now in use.

NOTE 2: Make a copy of this page and the next page and fill in the NVM values on the copy.

NOTE 3: If a Diagnostic Sheet is not available continue with this procedure. If the toner concentration values are corrupted, you will have to replace both developer modules.

3. Determine and record the Consumable Usage (COUNTER SET) values now in NVM. Refer to Section 6 if detailed Diagnostic procedures are required.
   a. Enter Normal diagnostics (**Menu [3]** + **Enter [7]**, Power On).
   b. Use **Menu [3]** to scroll to COUNTER SET DRUM.
   c. Press **Enter [7]** and record the Drum usage value.
   d. Press **Media Server [2]** to return to COUNTER SET.
   e. Press **Previous [5]** to select the next Consumable to be checked.
   f. Press **Enter [7]** and record the next Consumable Usage.
   g. Repeat steps d through f until at least the first seven consumables have been recorded. The last five are not critical.

COUNTER SET (Consumables)		
DRUM		Print Drum Images
YDEV		Yellow Developer Images
MDEV		Magenta Developer Images
CDEV		Cyan Developer Images
KDEV		Black Developer Images
PRNT		Total Print Quantity
FSU		Fuser Usage
YTON		Yellow Toner Supply time (sec)
MTON		Magenta Toner Supply time (sec)
CTON		Cyan Toner On time (sec)
KTON		Black Toner On time (sec)
OIL		Oil Usage

4. Determine and record the Print Counts.
   a. Press **Media Server [2]**; then press **Menu [3]** until PCU DIAG MODE is displayed
   b. Enter Special Diagnostics (PCU DIAG MODE displayed, press **On Line [0]**, then press **Enter [7]**, release both at same time).
   c. Use **Menu [3]** to scroll to COUNTER SET2 TTL.
   d. Press **Enter [7]** and record the TTL Count.
   e. Press **Media Server [2]** to return to COUNTER SET2.
   f. Press **Previous [5]** to select the next page count to be checked.
   g. Press **Enter [7]** and record the page count.
   h. Repeat steps e through g until the five page counts have been recorded. The last eight are not critical.

COUNTER SET2 (Print Counts)		
TTL		Total Pages
YPR		Yellow Print Images
MPR		Magenta Print Images
CPR		Cyan Print Images
KPR		Black Print Images
JAM		Jam Counter
OPC		Scan Error Counter
MAM		Main Motor Error Counter
PLM		Polygon Motor Error Counter
HLH		Over Temp Fusing Error Counter
HLL		Under Temp Fusing Error Counter
THO		Thermistor Error Counter
DVM		Developer Motor Error Counter

5. Determine and record the Toner Concentration Setpoints now in NVM.
   a. Press **Media Server [2]**; then press **Menu [3]** until TONER LEVEL YTON is displayed.
   b. Press **Enter [7]** and record the Y Toner Concentration Setpoint.
   c. Press **Media Server [2]** to return to TONER LEVEL.
   d. Press **Previous [5]** to select the next Toner Concentration Setpoint to be checked.
   e. Press **Enter [7]** and record the Toner Concentration setpoint.
   f. Repeat steps c through e until all four toner concentration setpoints have been recorded.

TONER LEVEL (Toner Concentration)		
YTON		Y Toner concentration (default 70)
MTON		M Toner concentration (default 70)
CTON		C Toner concentration (default 70)
KTON		K Toner concentration (default 70)

NOTE: These readings should normally be between 70 and 140. If they are all 70 or out of the 70 to 140 range, they have probably been corrupted. If this is the case, use the toner concentration values from the diagnostic sheet. If a diagnostic sheet is not available and the values are corrupt, both the Black and Color CRU's should be replaced after the PCU is initialized.

6. Compare the values on the Diagnostic sheet with the values stored in NVM. Determine which values to re-enter after the NVM is initialized. As you determine what values are to be used circle them, so you can re-enter them later.
   a. Determining the consumable usage value to use.
      - If the consumable has not been changed since the last call, use the larger of the consumable numbers.
      - If the consumable has been changed since the last call, use the smaller of the consumable numbers.
   b. Determining the Page count value to use:
      - Use the large of the page count numbers.
   c. Determining the Toner Concentration setpoints to use.
      - If the values in NVM agree with the values on the diagnostic sheet, enter these as the setpoints.
      - If the values in NVM do not agree with the values on the diagnostic sheet, and the developer CRU has not been changed, the NVM is corrupt, use the setpoints on the diagnostic sheet.
      - If the values in NVM do not agree with the values on the diagnostic sheet, and the developer CRU has been changed, use the NVM values as the setpoints.

NOTE: The Toner concentration setpoints are critical for good copy quality. These numbers determine the amount of toner in the developer housings.

ADJ 3.3B INITIALIZING THE NVM

CAUTION

Do not continue with the initialization procedure until you have determined the Consumable Usage and Toner Concentration values. Always start at the beginning of this procedure (ADJ 3.3A). Once you have determined the Consumable and Toner Concentration values, continue with the Initialization.

1. Enter Normal diagnostics (**Menu [3]** + **Enter [7]**, Power On). Write down the IOT software version.
2. Initialize the NVM.
   a. Press **Menu [3]** to scroll to NV-RAM INITIAL.
   b. Insert a sheet of paper into the bypass slot to actuate the Bypass Switch, then press the **Form Feed [1]** key. The On Line LED will switch on and then off when the change is stored.
4. Enter the Consumable Usage.
   a. Press **Menu [3]** to scroll to COUNTER SET DRUM.
   b. Press **Enter [7]**.
   c. Use **Menu [3]** to step to the digit to be changed. Use **Next [6]/Previous [5]** to change the value.
   d. Insert a sheet of paper into the bypass slot to actuate the Bypass Switch, then press the **Form Feed [1]** key. The On Line LED will switch on and then off when the change is stored.
   e. Press **Previous [5]** to select the next consumable to be entered.
   f. Repeat steps b through e until all consumable values have been entered.
5. Enter the Page Counts.
   a. Press **Menu [3]** to scroll to PCU DIAG MODE.
   b. Enter Special Diagnostics (PCU DIAG MODE displayed, press **On Line [0]**, then press **Enter [7]**, release both).
   c. Use **Menu [3]** to scroll to COUNTER SET2 TTL.
   d. Press **Enter [7].**
   e. Use **Menu [3]** to step to the digit to be changed. Use **Next [6]/Previous [5]** to change the value.
   f. Insert a sheet of paper into the bypass slot to actuate the Bypass Switch, then press the **Form Feed [1]** key. The On Line LED will switch on and then off when the change is stored.
   g. Press **Previous [5]** to select the next Page Count to be entered.
   h. Repeat steps d through g until all Page Counts have been reentered.
6. Enter the Toner Concentration Setpoints.
   a. Press **Media Server [2]** then use **Menu [3]** to scroll to TONER LEVEL YTON.
   b. Press **Enter [7].**
   c. Use **Next [6]/Previous [5]** to change the value.
   d. Insert a sheet of paper into the bypass slot to actuate the Bypass Switch, then press the **Form Feed [1]** key. The On Line LED will switch on and then off when the change is stored.
   e. Use **Previous [5]** to step to the next setpoint to be changed.
   f. Repeat steps b through e until all four Toner Concentration setpoints have been stored.
7. If the IOT software level is version 66, go Section 6 in the service manual and perform the Fuser Speed adjustment (GP 3.1).
8. Exit from Diagnostics by switching the power off waiting 10 seconds and switching the power back on.

ADJ 4.1 MAGNETIC ROLLER CLEANER SOLENOID

PURPOSE

The purpose of this adjustment is to ensure that the Magnetic Roller Cleaner Solenoid arm stops the Magnetic Roller Clutch when the solenoid is energized

CHECK

Switch the power off. Locate the 4 (K, C, M, Y) Magnetic Roller Cam Shafts (Figure 1). Switch the power on while observing the 4 Cam Shafts. The Shafts should rotate 180° when the Magnetic Roller Cleaning Solenoid is energized and another 180 ° when the solenoid deenergizes. If the shafts rotate continuously when the solenoid is energized, perform the adjustment.

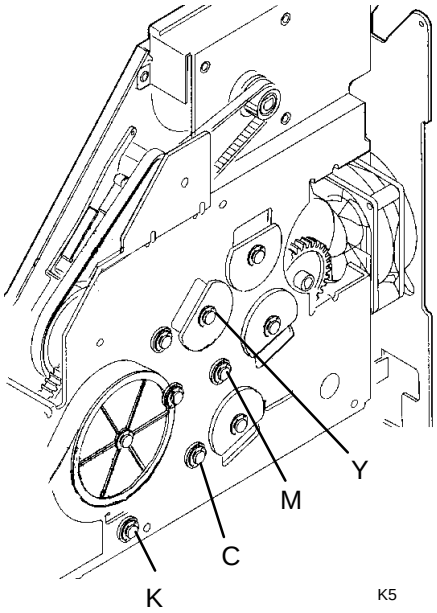


Figure 1. Checking the Shafts

ADJUSTMENT

1. (Figure 2): Insert a screwdriver in the hole just above the Yellow Toner Clutch and manually energize the Magnetic Roller Cleaning Solenoid.
2. Turn the Developer motor counterclockwise while watching the Magnetic Roller Cam Shafts.

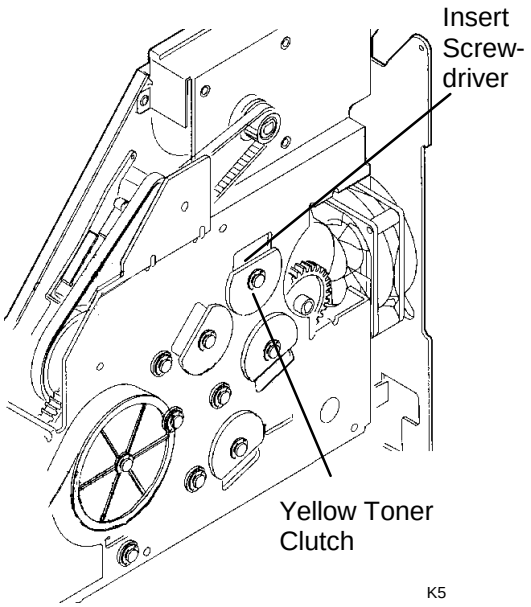


Figure 2. Energizing the Solenoid

3. Figure 3): Loosen the screws and move the solenoid until the arm stops the clutch when the solenoid is energized.

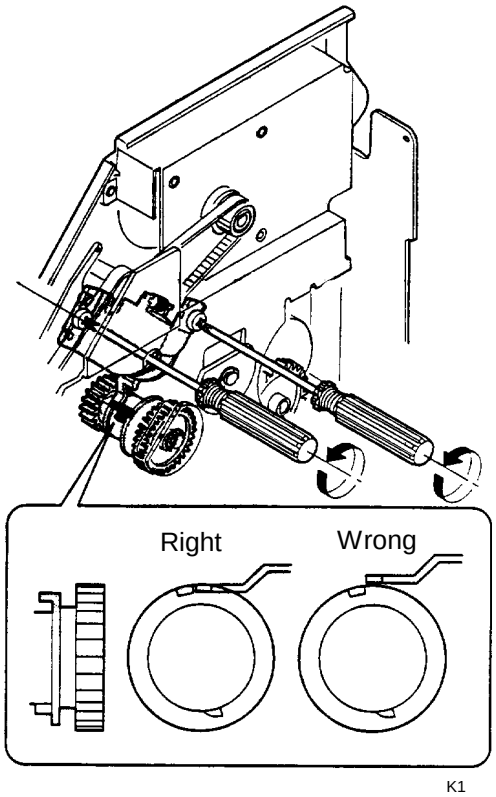


Figure 3. Adjusting the Solenoid

ADJ 6.1 MAGNETIC ROLLER CLEANER CAMS

PURPOSE

The purpose of this adjustment is to ensure that the Magnetic Roller Cleaner Cams raise the Cleaner Blades when the Magnetic Roller Solenoid is energized and lower the Cleaner Blades when the solenoid is deenergized.

CHECK

Switch the power off. Open the printer and remove the Print Drum, Color Developer Module, and Black Developer Module. Observe the four (Y, M, C, K) Magnetic Roller Cams (Figure 1). The M, C, and K cam lobes should be in the same radial position as the Y cam lobe. If they are not the same, perform the adjustment.

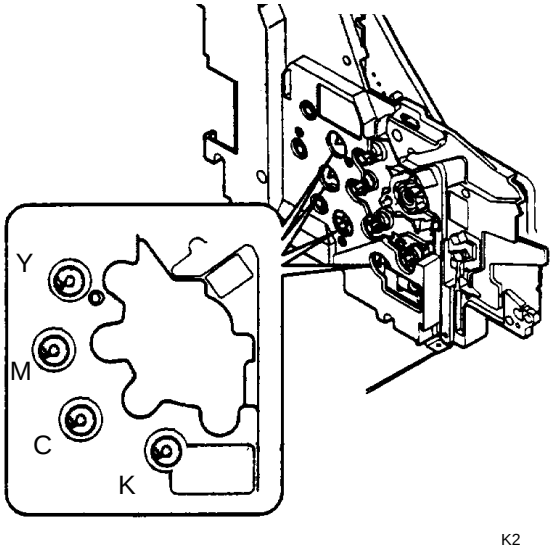


Figure 1. Checking the Shafts

ADJUSTMENT

1. Remove the Outer Drive Frame (REP 4.8 steps 1, 2, and 3)
2. (Figure 2): Remove the three idler gears.
3. Rotate the M, C, and K cams until they are aligned with the Y Cam.
4. Reinstall the three idler gears.
5. Perform the ADJ 4.1 check.

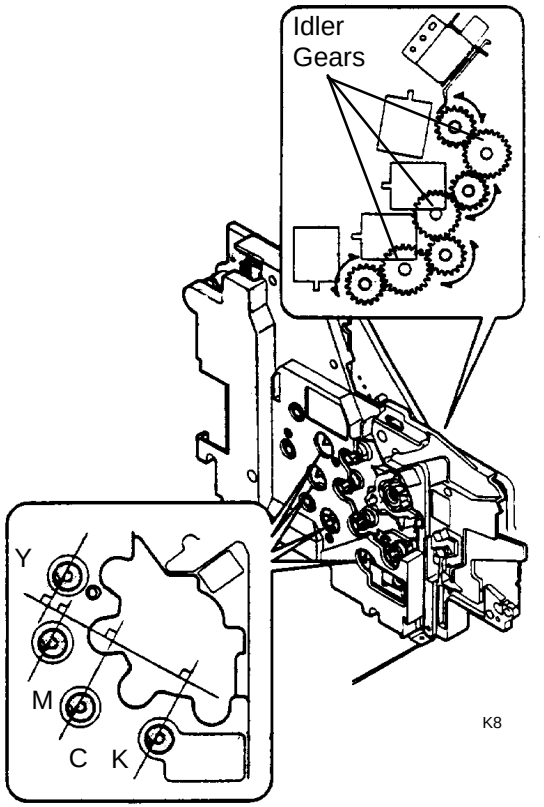


Figure 2. Aligning the Cams

ADJ 9.1 EA "TONE DOWN" PROCEDURE

PURPOSE

The purpose of this procedure is to "Tone Down" the color developer. It is also used to put the printer back in operation after an EA fault.

INITIAL ACTION

Refer to GP 3.2 in Section 6 and make sure that the Patch Control is switched off.

CHECK

1. Enter Normal diagnostics. Scroll to the TEST PRINT program and press **Form Feed [1]** to run a test print. While the print is running, observe the KT=__, CT=__, MT=__, YT=__ values.
2. If any of the three color (C, M, Y) toner concentration values are below 10, that color is overtoned. Continue with Step 3 to correct the overtoned condition.
3. With TEST PRINT displayed press **Enter [7]**.
4. Use the **Menu [3]** key to scroll to MULTI OFF. Press **Next [6]** until the display indicates MULTI ON. (This will put the TEST PRINT program in the multicopy mode.)
5. Use the **Menu [3]** key to scroll to TONER ON. Press **Next [6]** until the display indicates TONER OFF. (This will shut off all toner dispensing.)
6. Press **Media Server [2]** to return to TEST PRINT, then press **Form Feed [1]** to make multiple Test Prints.
7. Observe the KT=__, CT=__, MT=__, YT=__ values. The values should begin to "count up" as toner is used and not replenished.
8. When the lowest value reaches 10, press **Media Server [2]** to stop the Test Prints.
9. Switch the Printer off and then on.
10. If the Printer Boots without the EA fault, continue with step 11. If the printer still has the EA fault, repeat steps 3 through 10 and run multiple test prints with the toner off until the toner concentration value in question increases and the EA fault no longer occurs.
11. Print a diagnostic sheet.
    a. **(C55/C55mp) Off Line**, Service, Test Patterns, Diagnostics.
    b. **[NC60] Menu Up**, to Service, **Value Up** to Diag Summary, **Enter**.
13. Compare the Toner Concentration Control Point with the Toner Concentration Value. If any of the C, M, Y Values are 15 points below the Control Point this color is overtoned, continue with this procedure.
14. Run the color step pattern for the color that is overtoned
    a. **(C55/C55mp) Off Line**, Service, Test Patterns, Pattern Type, PCL, (overtoned color) Step. Run at least 25 prints.
    b. **[NC60] Menu Up** to Service, **Item Up** to test Patterns, **Value Up** to (overtoned color) Step. Run at least 25 prints.
15. Repeat steps 11 through 13 until the Toner Concentration Value is within 10 to 15 points of the Control Point.

NOTE: This procedure puts the toner concentration back within the controlling range. If the problem reoccurs, refer to GP 3.2 in section 6 to verify that Patch Control is off and the refer to the EA RAP if necessary.

ADJ 11.1 TRANSFER DRUM NIP

PURPOSE

The purpose of this adjustment is to ensure that the nip between the Transfer Drum and Print Drum is within specification. Too large a nip may cause paper jams or registration problems. Too small a nip may cause copy quality problems.

CHECK

1. Run an IOT Test Pattern and panic stop the printer with the Cyan strip on the drum.
   a. Enter Normal diagnostics (**Menu [3]** + **Enter [7]**, Power On).
   b. Use **Menu [3]** to scroll to TEST PRINT.
   c. Press **Form Feed [1]** and observe the toner concentration (T=) indication on the Message Display.
   d. Wait until the paper feeds, then be prepared to switch the printer off.
   e. Observe the Message Display. When the display indicates CT=XX, wait approximately 2 seconds then switch the power off.
2. Open the printer and remove the Print Drum module.
3. (Figure 1): Rotate the Print Drum up until there is a Cyan color bar in the position shown.

NOTE: Be sure to rotate the gear in the direction shown. If the drum is rotated in the reverse direction the Cleaning blade or Drum may be damaged.

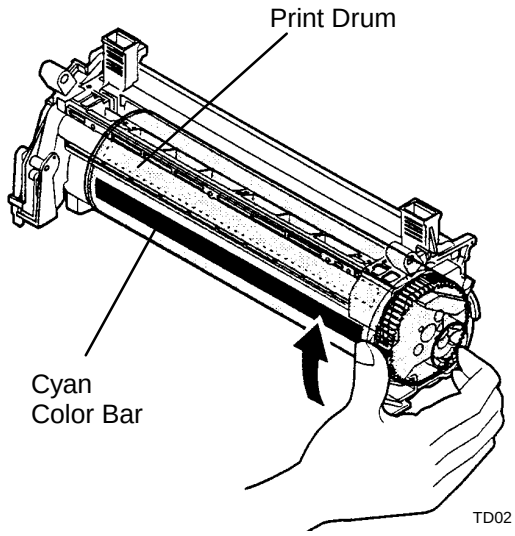


Figure 1. Rotating the Print Drum

4. Reinstall the Print Drum Module.
5. (Figure 2): Rotate the Transfer drum until the paper is positioned with a blank area opposite the Print Drum as shown.

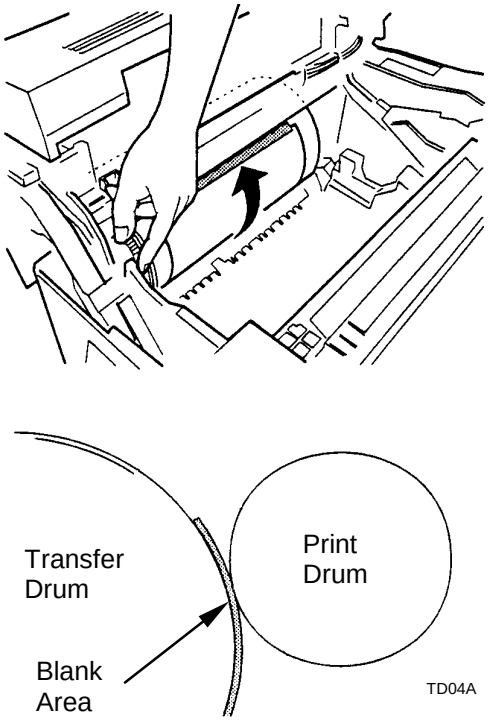


Figure 2. Positioning the Transfer Drum

6. Close then open the Transfer Assembly. This will transfer the Cyan image to the paper.
7. Repeat steps 2 through 6 until you have three transfers from three different areas of the transfer drum.
8. (Figure 3): Remove the paper and measure the width (Nip) of the Image on the paper. Make the measurement 35 MM from the edge of the paper.

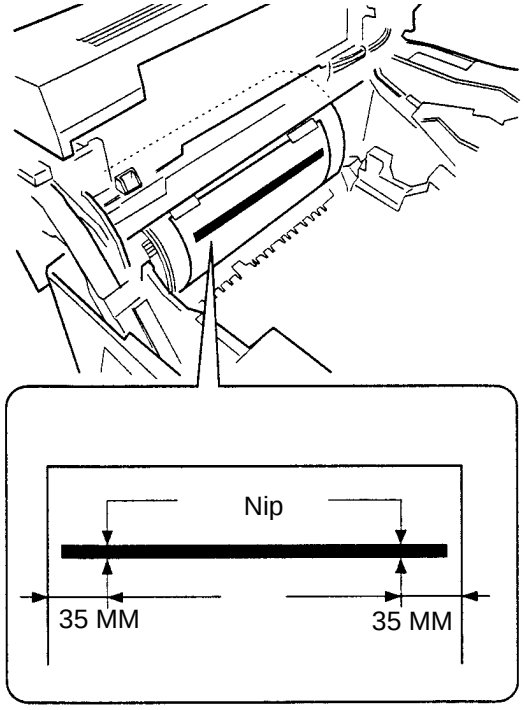


Figure 3. Measuring the Nip

9. The Nip should be 2 ±.5 MM.
10. If the Nip is not within specification, perform the adjustment.

ADJUSTMENT

1. (Figure 4): Locate the two adjustment cams on the left and right side of the Transfer Drum. You will need to rotate the Transfer Drum Gear until the adjustment screw and cam are visible through the cutout on the right side.

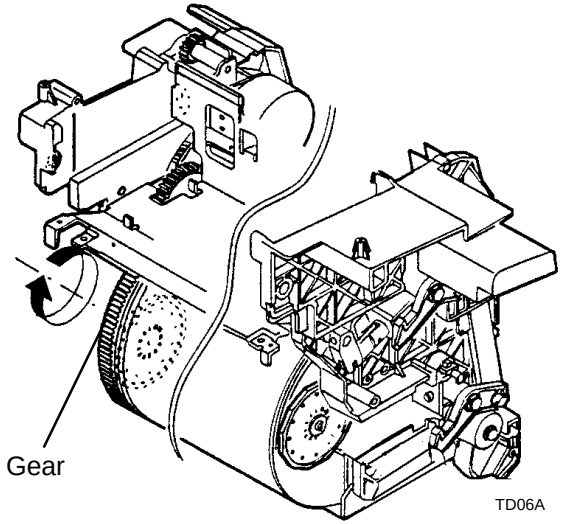


Figure 4. Rotating the Gear

2. (Figure 5): Note the number of the flat that is close to the Print Drum. Then loosen the two screws securing the left and right adjustment plates
3. A higher number will decrease the Nip. A lower number will increase the Nip.
4. Move the plate as required.
5. Repeat the check.

NOTE: You may be able to re-use the Cyan image on the Print Drum by rotating it slightly. If not, create another image.

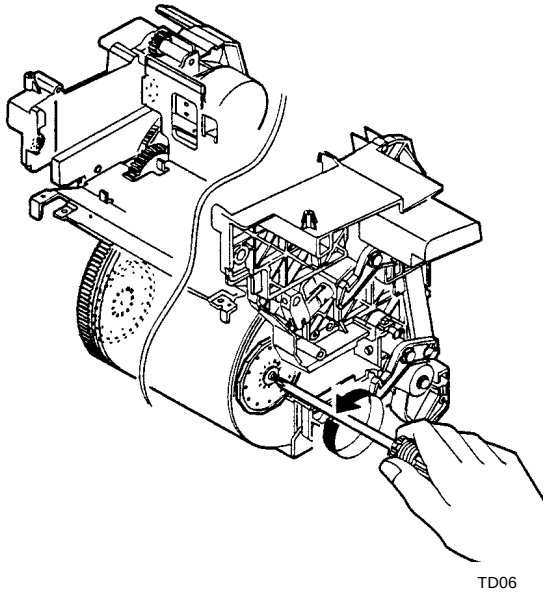


Figure 5. Adjusting the Nip

ADJ 12.1 ROS POSITIONING

PURPOSE

The purpose of this adjustment is position the ROS assembly so that the image is placed on the Print Drum properly.

CHECK

Print test pattern A. Fold the print and check the registration lines in the corners of the print to ensure that they are square. If the lines are not square, perform the adjustment.

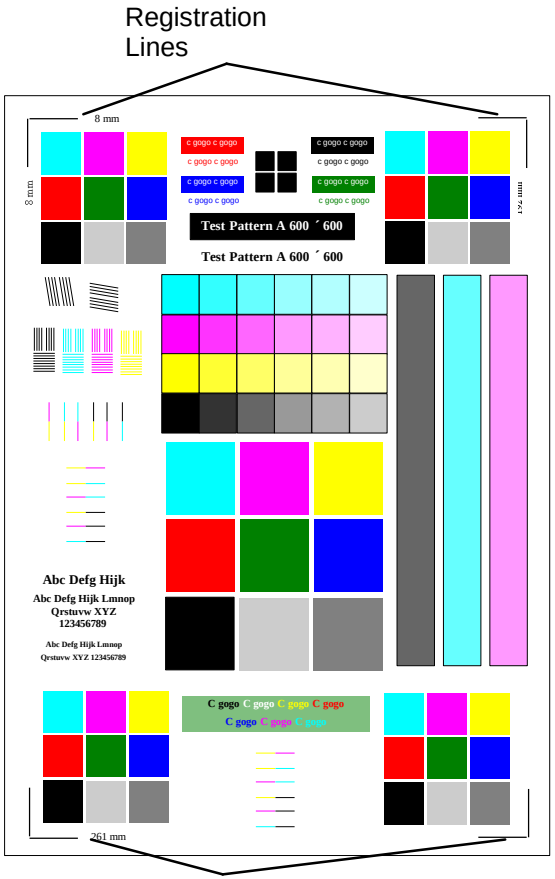


Figure 1. Test Pattern A

ADJUSTMENT

1. Loosen the screws and move the ROS assembly as shown.
2. Tighten the screws and repeat the Check.

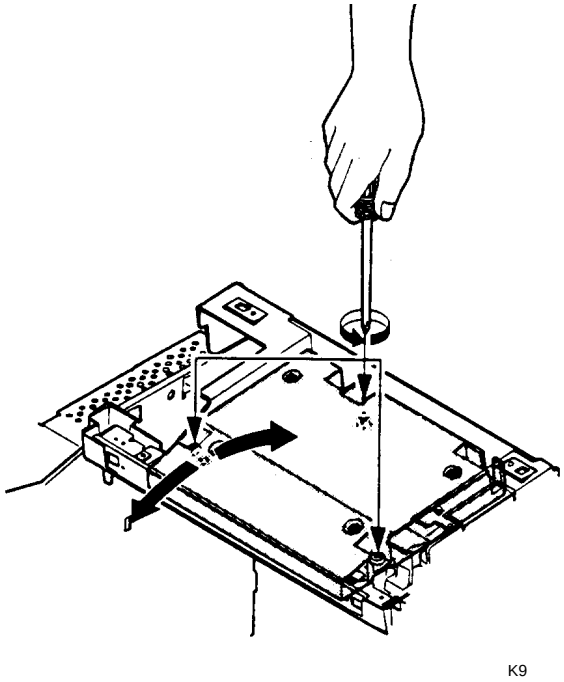


Figure 2. Moving the ROS

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OVERVIEW

The Parts List section identifies all part numbers and the corresponding location of all spared subsystem components.

ORGANIZATION

PARTS LISTS

Each item number in the part number listing corresponds to an item number in the related illustration. All the parts in a given subsystem of the machine will be located in the same illustration or in a series of associated illustrations.

ELECTRICAL CONNECTORS AND FASTENERS

This section contains the illustrations and descriptions of the plugs, jacks, and fasteners used in the machine. A part number listing of the connectors is included.

COMMON HARDWARE

The common hardware is listed in alphabetical order by the letter or letters used to identify each item in the part number listing and in the illustrations. Dimensions are in millimeters unless otherwise identified.

PART NUMBER INDEX

This index lists all the spared parts in the machine in numerical order. Each number is followed by a reference to the parts list on which the part may be found.

OTHER INFORMATION

ABBREVIATIONS

Abbreviations are used in the parts lists and the exploded view illustrations to provide information in a limited amount of space. The following abbreviations are used in this manual:

C	Cyan
DC	Direct Current
ESS	Electronic Sub-system
HVPS	High Voltage Power Supply
HZ	Hertz
IF	Interface
K	Black
LVPS	Low Voltage Power Supply
M	Magenta
MB	MegaByte
MM	Millimeter
PCL	Printer Control Language
P/0	Part Of
PS	PostScript
PWB	Printed Wiring Board
REF	Reference
SLIC	Serial Local Interface Card
SIMM	Single Inline Memory Module
T	Teeth
TD	Transfer Drum
Y	Yellow

SYMBOLOGY

Symbology used in the Parts List section is identified in the Symbology section.

SUBSYSTEM INFORMATION

USE OF THE TERM "ASSEMBLY"

The term "assembly" will be used for items in the part number listing that include other itemized parts in the part number listing. When the word "assembly" is found in the part number listing, there will be a corresponding item number on the illustrations followed by a bracket and a listing of the contents of the assembly.

BRACKETS

A bracket is used when an assembly or kit is spared, but is not shown in the illustration. The item number of the assembly or kit precedes the bracket; the item numbers of the piece parts follow the bracket.

Tag

The notation "W/Tag" in the parts description indicates that the part configuration has been updated. Check the Change Tag Index in the General Information section of the Service Data for the name and purpose of the modification.

In some cases, a part or assembly may be spared in two versions: with the Tag and without the Tag. In those cases, use whichever part is appropriate for the configuration of the machine on which the part is to be installed. If the machine does not have a particular Tag and the only replacement part available is listed as "W/Tag," install the Tag kit or all of the piece parts. The Change Tag Index tells you which kit or piece parts you need.

Whenever you install a Tag kit or all the piece parts that make up a Tag, mark the appropriate number on the Tag matrix.

SYMBOLOGY

A tag number within a circle and pointing to an item number shows that the part has been changed by the tag number within the circle (Figure 1). Information on the modification is in the Change Tag Index.

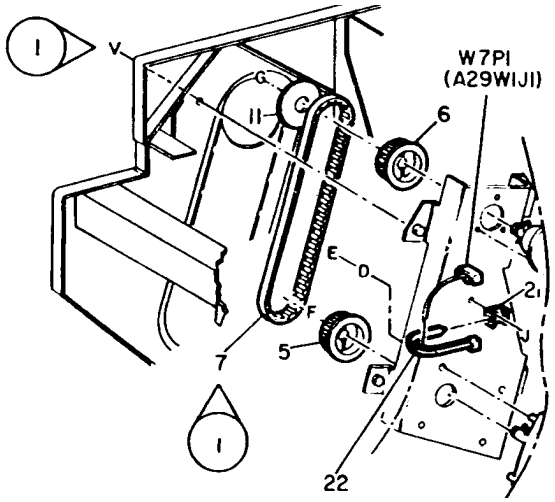


Figure 1. With Tag Symbol

A tag number within a circle having a shaded bar and pointing to an item number shows that the configuration of the part shown is the configuration before the part was changed by the tag number within the circle (Figure 2).

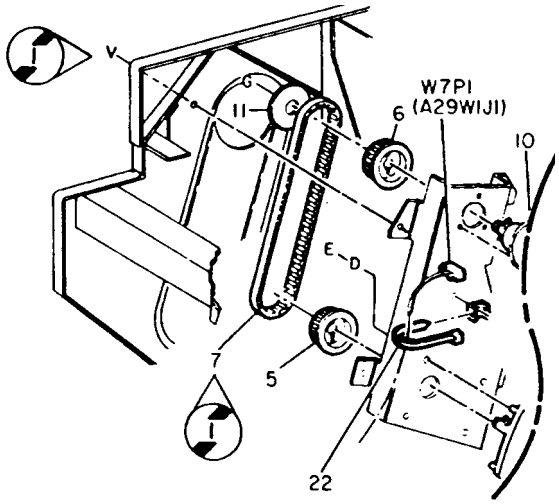


Figure 2. Without Tag Symbol

A tag number within a circle with no apex shows that the entire drawing has been changed by the tag number within the circle (Figure 3). Information on the modification is in the Change Tag Index.

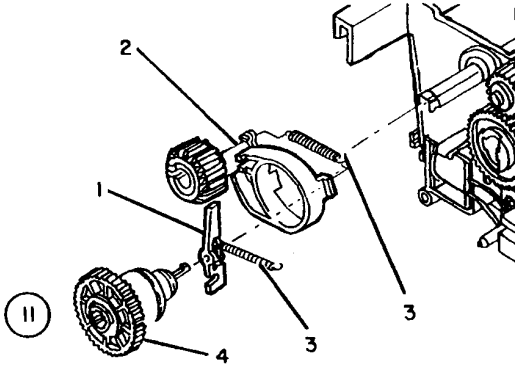


Figure 3. Entire Drawing With Tag Symbol

A tag number within a circle with no apex and having a shaded bar shows that the entire drawing was the configuration before being changed by the tag number within the circle (Figure 4).

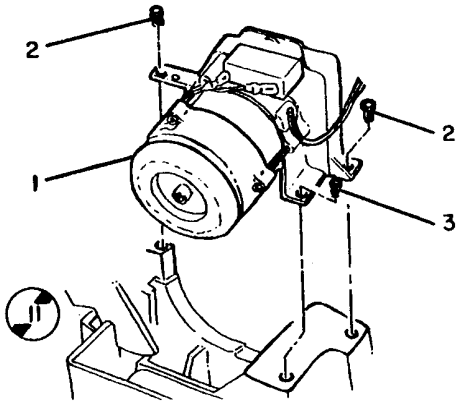
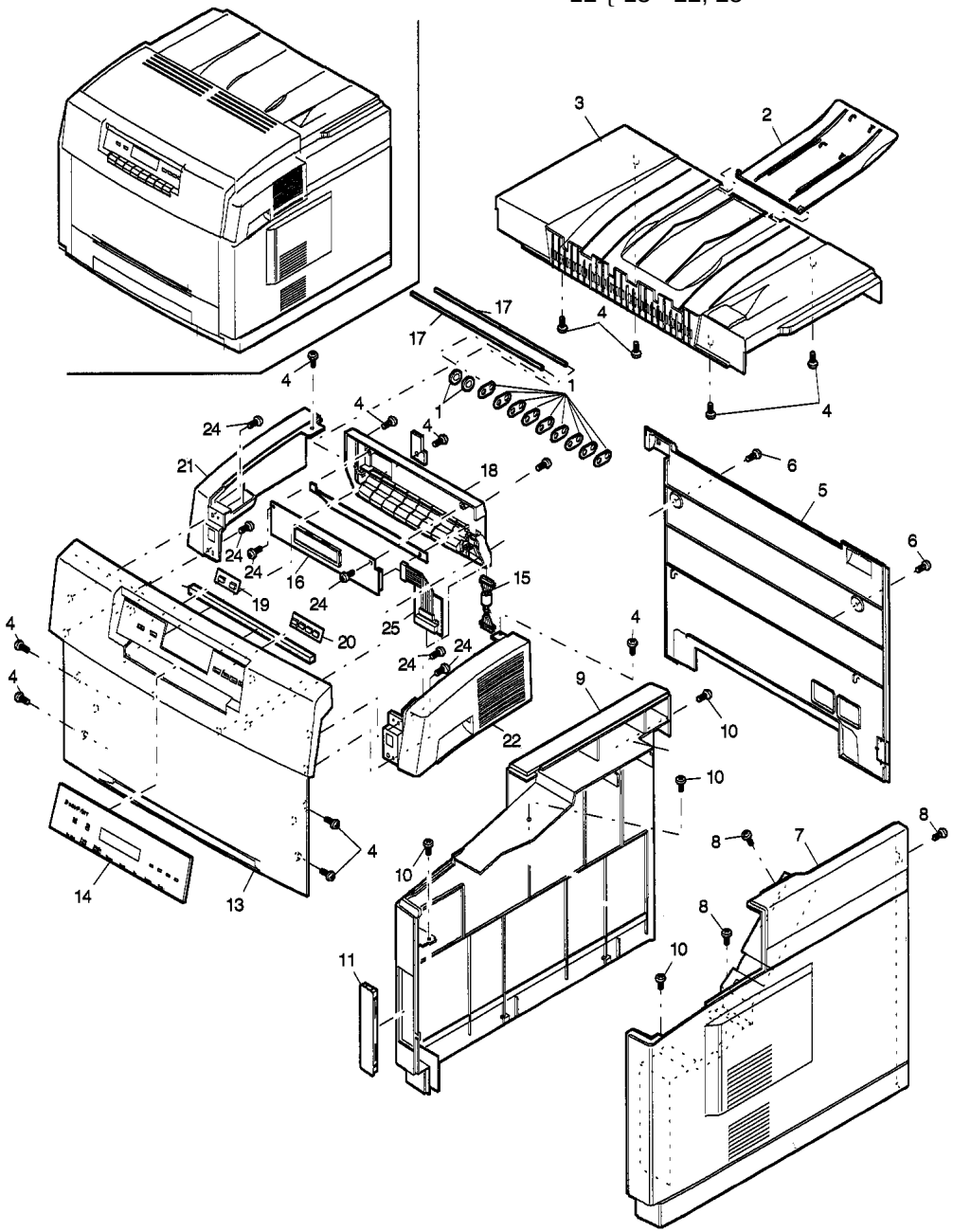


Figure 4. Entire Drawing Without Tag Symbol

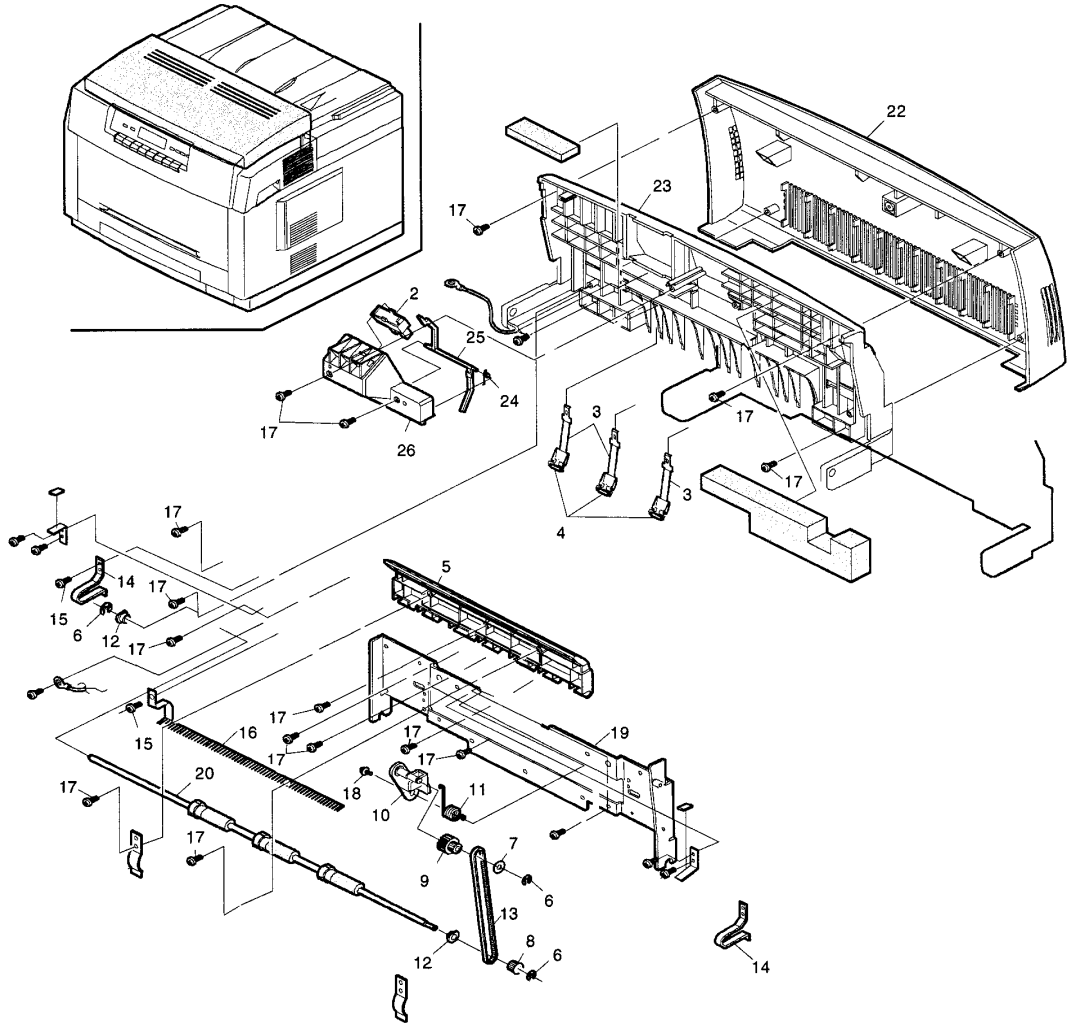
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12 { 13 - 22, 25

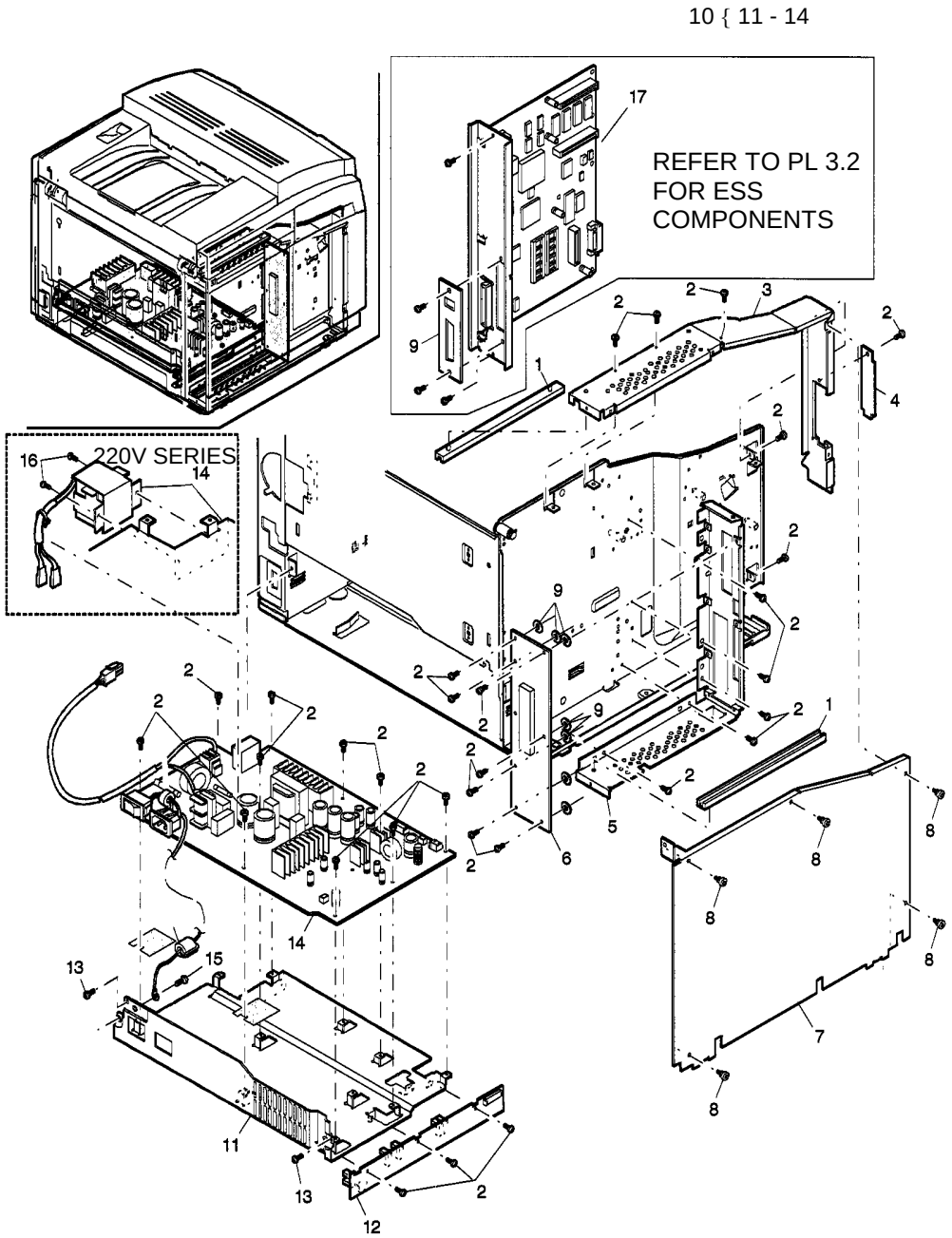


ITEM	PART	DESCRIPTION
1	NOT SPARED	SPACER
2	38E17370	OUTPUT GUIDE
3	48E43540	TOP REAR COVER (REP 1.1)
4	NOT SPARED	SCREW (M3X8)
5	48E43550	REAR COVER (REP 1.2)
6	NOT SPARED	SCREW (M3X6)
7	48E43560	RIGHT COVER (REP 1.3)
8	NOT SPARED	SCREW (M3X8)
9	48E43580	LEFT COVER (REP 1.3)
10	NOT SPARED	SCREW
11	NOT SPARED	BLIND COVER
12	48K56920	FRONT COVER ASSEMBLY **C55** (REP 1.4)
--	802E6940	FRONT COVER ASSEMBLY **NC60** (REP 1.4)
13	(P/O ITEM 12)	FRONT COVER
14	(P/O ITEM 12)	DISPLAY PANEL
15	162K29280	HARNESS
16	101E13090	CONTROL PANEL
17	24E2480	ROD
18	3E42110	BUTTON UNIT **C55**
--	802E6950	BUTTON UNIT **NC60**
19	(P/O ITEM 12)	PANEL A
20	(P/O ITEM 12)	PANEL B
21	48E53740	LEFT COVER
22	48E53730	RIGHT COVER
23	NA	
24	NOT SPARED	SCREW (M3X6)
25	(P/O ITEM 16)	SUPPRESSION PWB

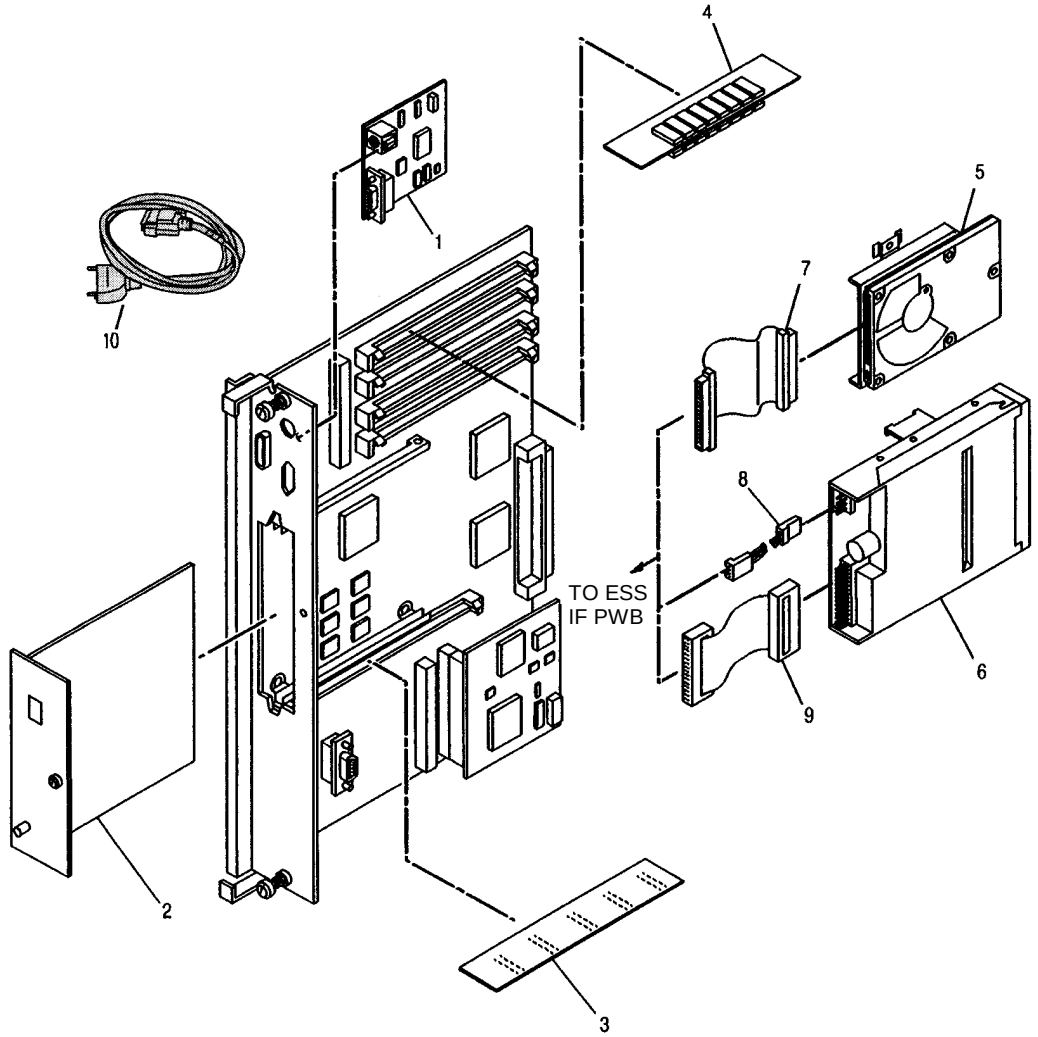
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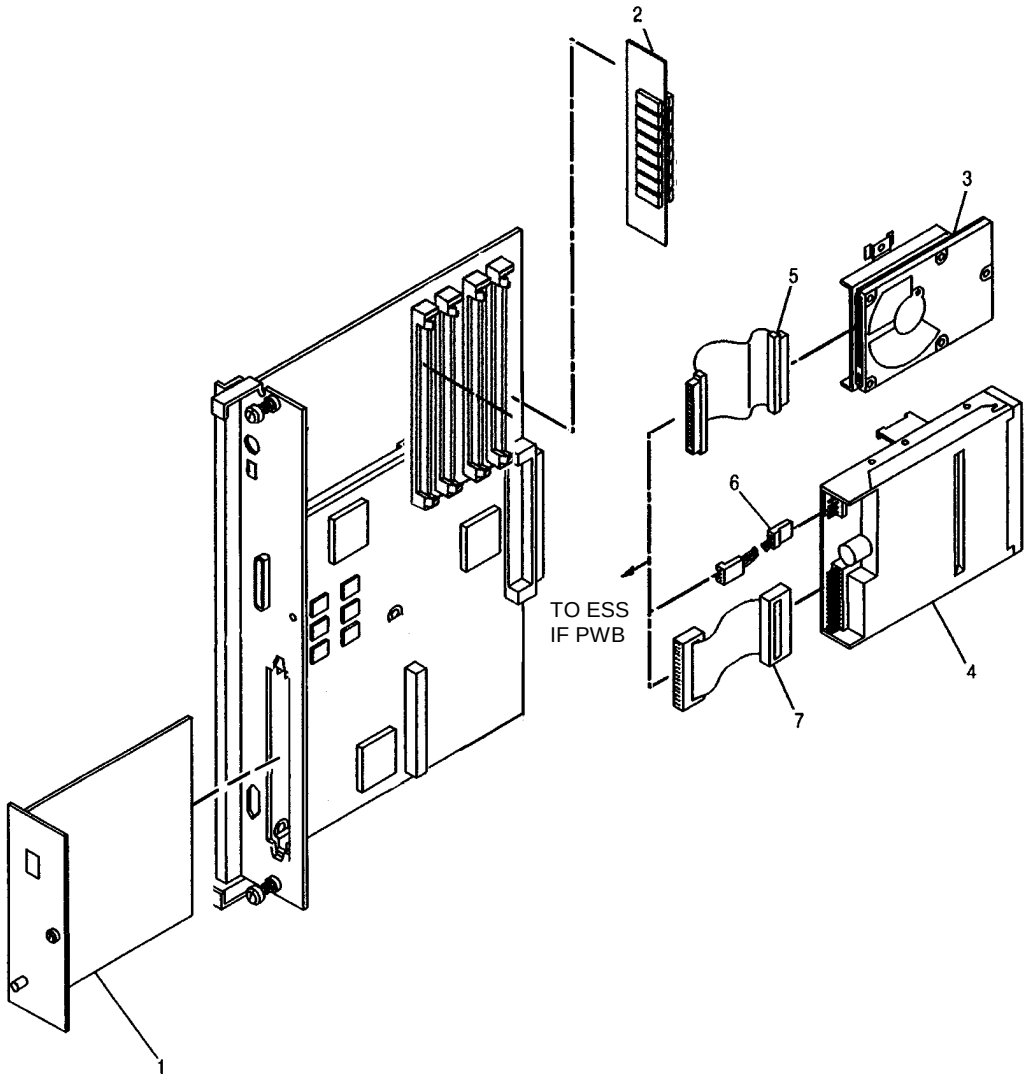
ITEM	PART	DESCRIPTION
1	48K56910	EXIT ASSEMBLY
2	130E7980	EXIT SENSOR
3	22K53910	GUIDE ROLLER
4	P/O ITEM 3	
5	38E18360	GUIDE
6	(P/O ITEM 1)	RETAINING RING (3MM)
7	(P/O ITEM 1)	WASHER
8	7E51210	GEAR
9	7E51200	IDLER GEAR
10	15E64370	OUTPUT DRIVE ARM
11	809E5670	SPRING
12	13E12520	BEARING
13	23E14890	BELT
14	809E1780	SPRING
15	NOT SPARED	SCREW (M3X4)
16	115E5830	STATIC ELIMINATOR
17	NOT SPARED	SCREW (M3X8)
18	NOT SPARED	SCREW (M3X6)
19	1E46930	OUTPUT FRAME
20	6E58160	OUTPUT SHAFT
21	N/A	
22	48E43530	TOP FRONT COVER (REP 2.1)
23	55E38910	SHIELD
24	809E5660	SPRING
25	120E15800	ACTUATOR
26	101E13700	SENSOR COVER



ITEM	PART	DESCRIPTION
1	NOT SPARED	GUIDE
2	NOT SPARED	SCREW (M3X6)
3	NOT SPARED	SHROUD
4	NOT SPARED	COVER
5	NOT SPARED	SHROUD
6	160K32850	ESS IF BOARD
7	NOT SPARED	
8	NOT SPARED	
9	NOT SPARED	
10	105K16400	LVPS ASSY (110V) (REP 3.1)
-	105K16390	LVPS ASSY (220V) (REP 3.1)
11	(P/O ITEM 10)	BRACKET
12	160K32790	CASSETTE PWB (REP 3.2)
13	(P/O ITEM 10)	SCREW (M3X6)
14	(P/O ITEM 10)	LVPS PWB
15	NOT SPARED	SCREW (M4X6)
16	NOT SPARED	SCREW (M3X4)
17	160K49683	ESS PWB **- C55** (REP 3.4)
--	160K63720	ESS PWB **- NC60** (REP 3.4)

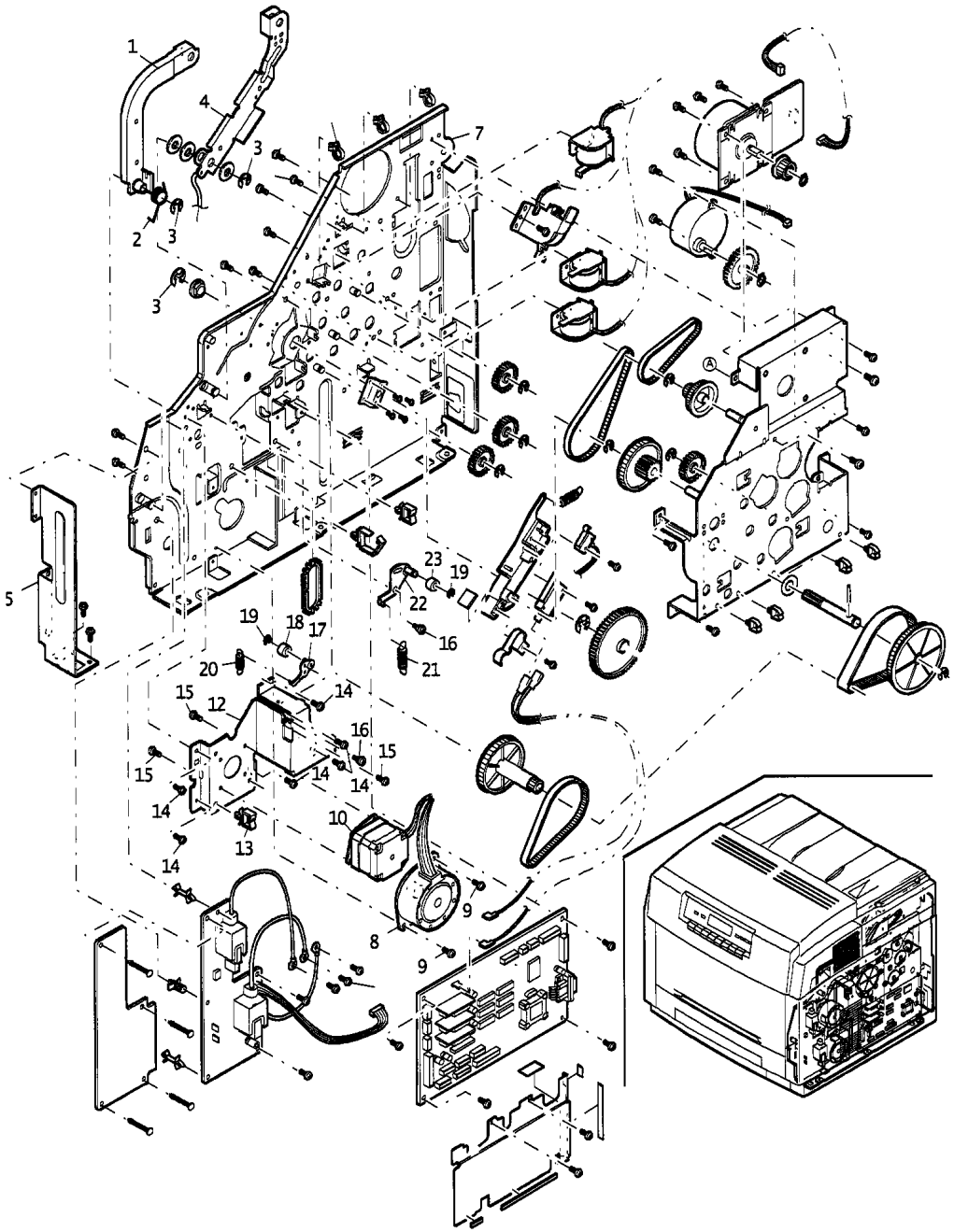


ITEM	PART	DESCRIPTION
1	160K40980	SLIC PWB
2	160K27110	TOKEN RING CARD (OPTIONAL)
	160K40220	ETHERNET CARD (OPTIONAL)
3	160K40550	PCL FONT SIMM
	160K40560	PCL / PS FONT SIMM
4	733W3660	4MB MEMORY SIMM
	733W3647	8MB MEMORY SIMM
	733W3642	16MB MEMORY SIMM
	733W3675	32MB MEMORY SIMM
5	146K560	HARD DISK DRIVE
6	121K15660	MEDIA SERVER
7	162K28010	DATA HARNESS
8	162K27990	DC POWER HARNESS
9	162K28000	DATA HARNESS
10	117E18150	PARALLEL CABLE



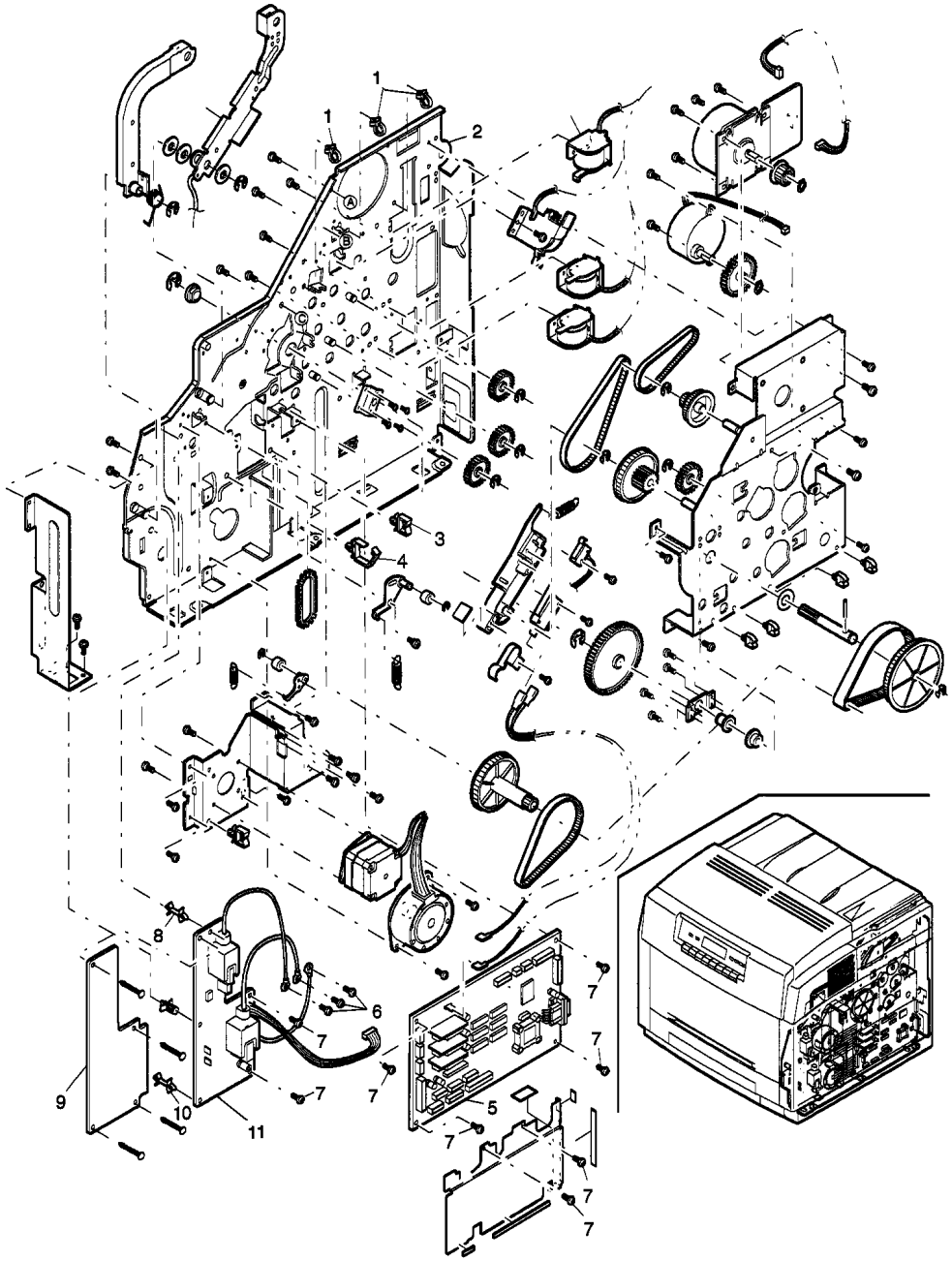
ITEM	PART	DESCRIPTION
1	160K44790	TOKEN RING CARD (OPTIONAL)
--	160K54960	ETHERNET CARD (100 MB) (OPTIONAL)
2	733W6865	8MB MEMORY SIMM
--	733W6866	16MB MEMORY SIMM
--	733W6867	32MB MEMORY SIMM
3	121K25380	HARD DISK DRIVE
4	121K15660	MEDIA SERVER
5	162K28010	DATA HARNESS
6	162K27990	DC POWER HARNESS
7	162K28000	DATA HARNESS

PL 4.1 MAIN DRIVES



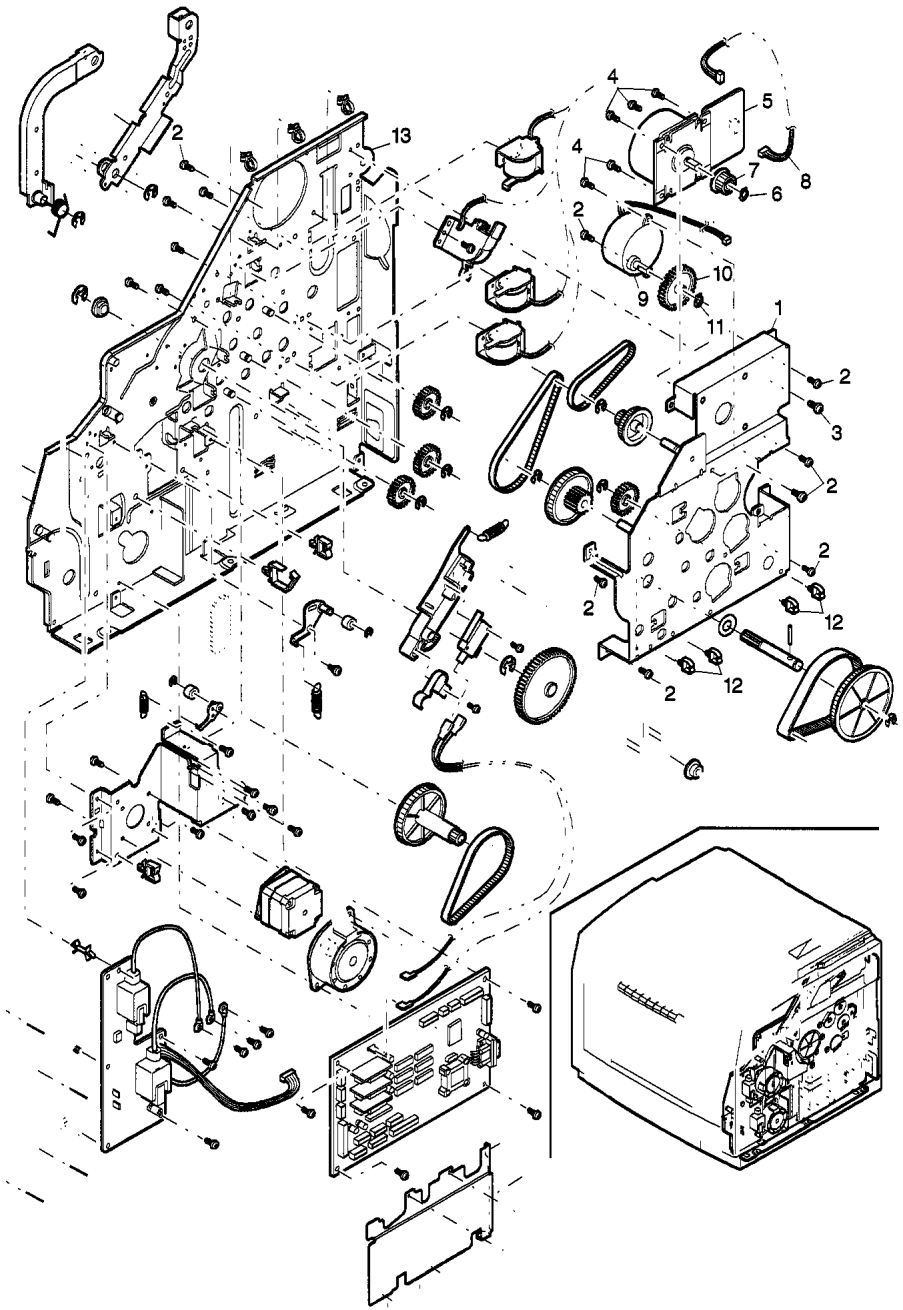
ITEM	PART	DESCRIPTION
1	12E8440	LOWER LINK
2	809E1700	LOWER LINK SPRING
3	NOT SPARED	RETAINING RING (7MM)
4	12E8430	UPPER LINK
5	NOT SPARED	BRACKET
6	NA	
7	NOT SPARED	RIGHT SIDE FRAME
8	127E10950	PAPER FEED MOTOR
9	NOT SPARED	SCREW (M3X8)
10	127E10940	MAIN DRIVE MOTOR (REP 4.1)
11	NA	
12	49E84410	MAIN DRIVE BRACKET
13	NOT SPARED	CABLE CLAMP
14	NOT SPARED	SCREW (M3X6)
15	NOT SPARED	SCREW (M3X6)
16	NOT SPARED	SCREW
17	NOT SPARED	TENSION ARM
18	22E21890	TENSION PULLEY
19	NOT SPARED	RETAINING RING (4MM)
20	809E2170	SPRING
21	NOT SPARED	SPRING
22	31E8800	TENSION ARM
23	22E21880	TENSION PULLEY

PL 4.2 PCU HVPS



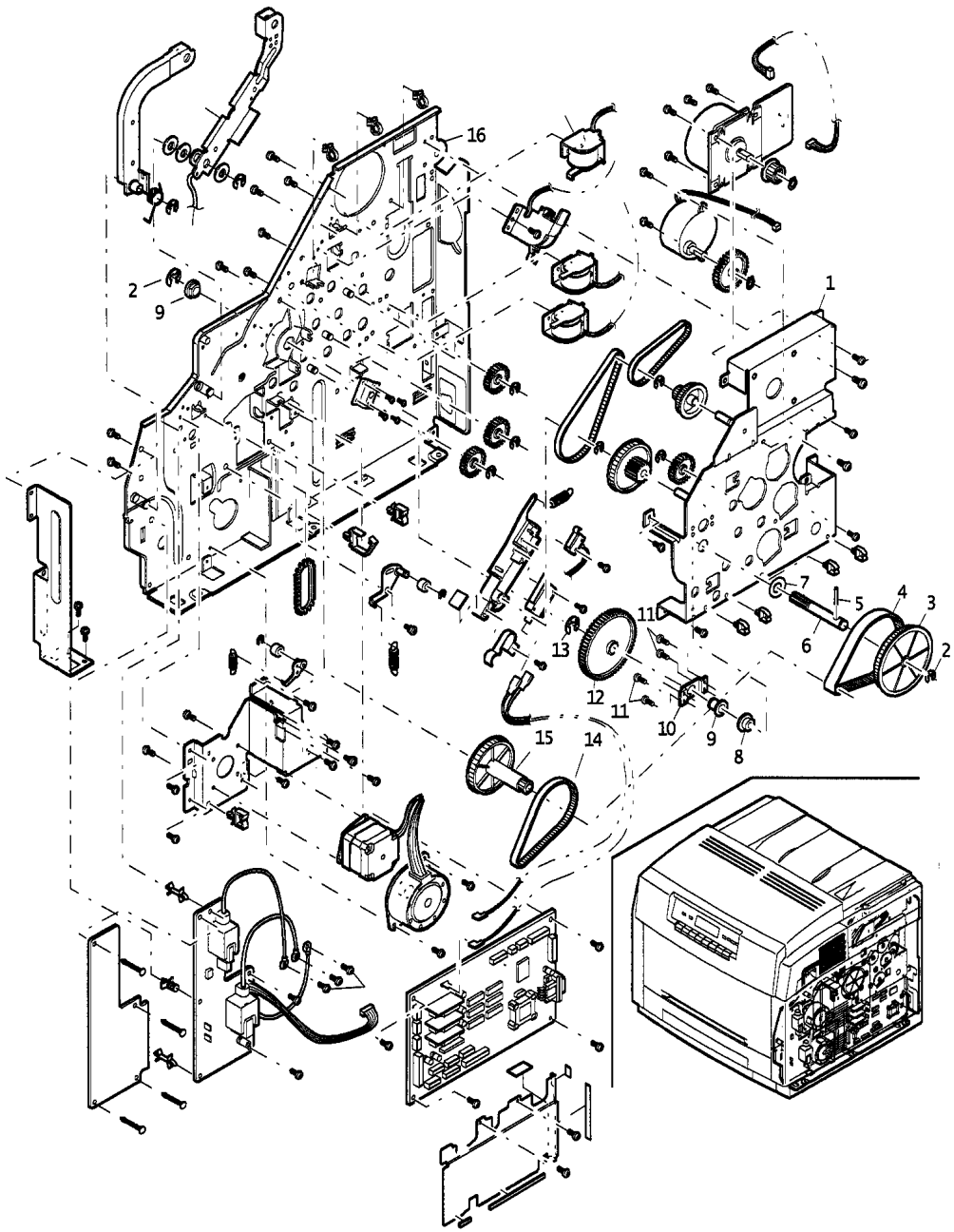
ITEM	PART	DESCRIPTION
1	NOT SPARED	CABLE CLAMP
2	NOT SPARED	RIGHT SIDE FRAME
3	NOT SPARED	CABLE CLAMP
4	NOT SPARED	CABLE CLAMP
5	160K50080	PCU BOARD **C55**
--	180K60120	PCU BOARD **NC60**
6	NOT SPARED	SCREW
7	NOT SPARED	SCREW (M3X8)
8	NOT SPARED	STANDOFF
9	NOT SPARED	PLATE
10	NOT SPARED	STANDOFF
11	105K16410	HVPS

PL 4.3 COLOR TONER MOTOR, DEVELOPER MOTOR



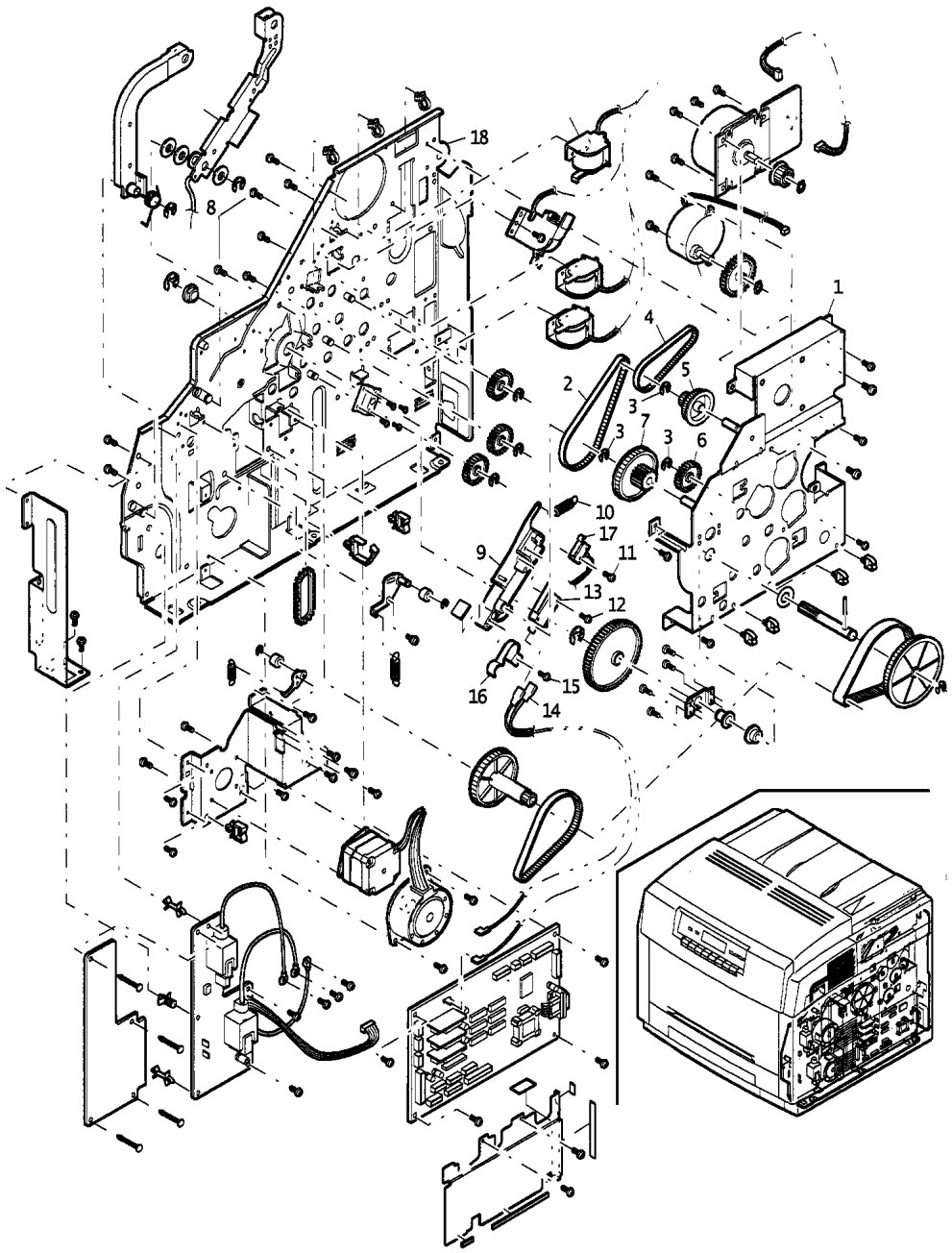
ITEM	PART	DESCRIPTION
1	NOT SPARED	DRIVES FRAME
2	NOT SPARED	SCREW (M3X6)
3	NOT SPARED	SCREW (M4X8)
4	NOT SPARED	SCREW (M4X6)
5	127E10890	DEVELOPER MOTOR (REP 4.6)
6	NOT SPARED	RETAINING RING
7	20E28760	DEVELOPER PULLEY
8	162K35600	HARNESS
9	127E10900	COLOR TONER MOTOR (REP 4.5)
10	7E48420	GEAR
11	NOT SPARED	RETAINING RING
12	NOT SPARED	CABLE TIE
13	NOT SPARED	RIGHT SIDE FRAME

PL 4.4 MAIN DRIVE COMPONENTS



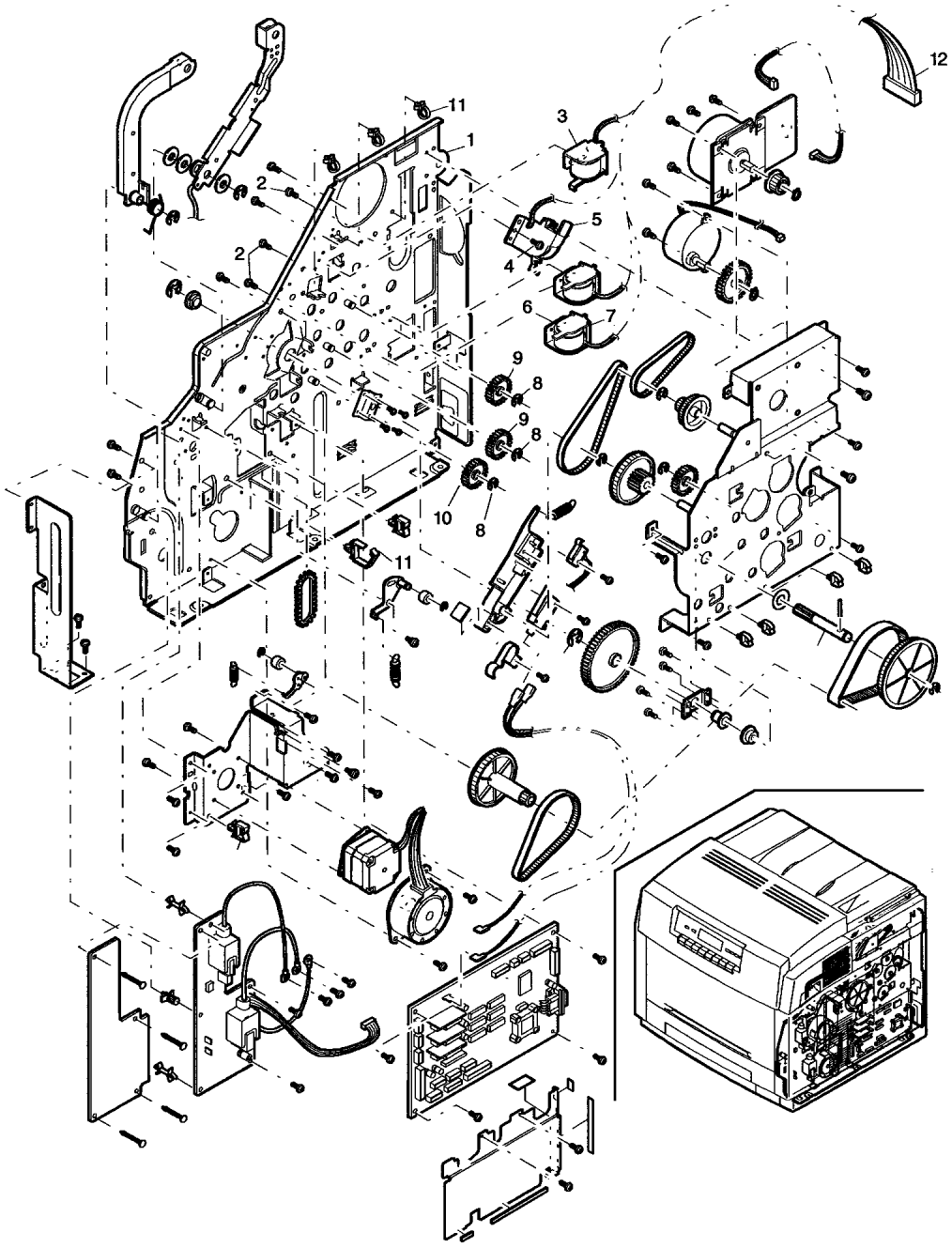
ITEM	PART	DESCRIPTION
1	NOT SPARED	DRIVES FRAME
2	NOT SPARED	RETAINING RING (7MM)
3	20E28780	PULLEY
4	23E14940	MAIN DRIVE BELT A (REP 4.2)
5	29E25280	PIN
6	6E61520	SHAFT
7	NOT SPARED	WASHER
8	13E13390	BEARING
9	13E13350	BEARING
10	15E64320	GEAR SUPPORT PLATE
11	NOT SPARED	SCREW (M3X6)
12	7E48480	GEAR
13	NOT SPARED	RETAINING RING
14	23E14950	MAIN DRIVE BELT B (REP 4.2)
15	20E28790	MAIN DRIVE PULLEY
16	NOT SPARED	RIGHT SIDE FRAME

PL 4.5 INTERLOCK SWITCHES, DEVELOPER DRIVE COMPONENTS



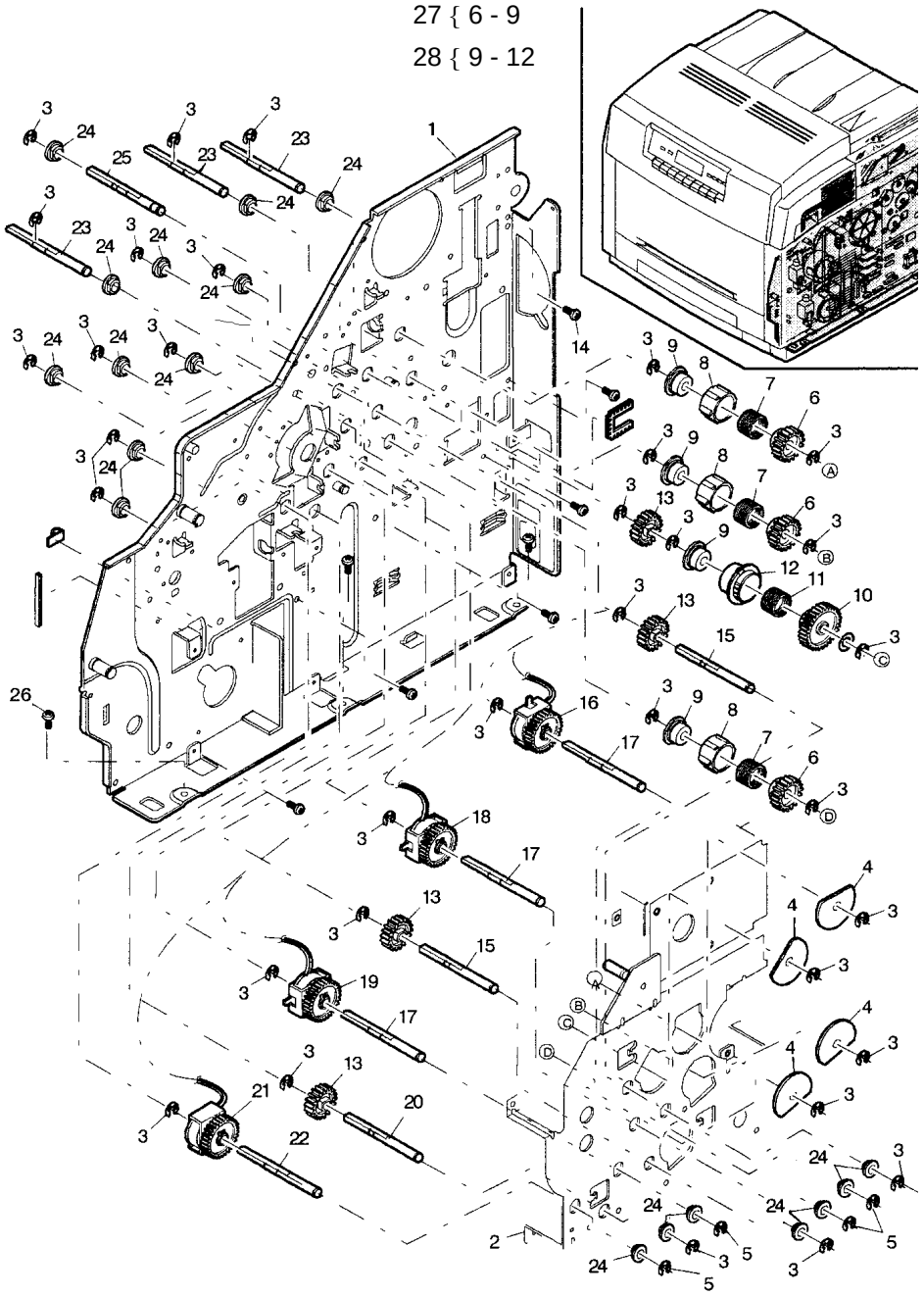
ITEM	PART	DESCRIPTION
1	NOT SPARED	DRIVES FRAME
2	23E14930	BELT C (REP 4.3)
3	NOT SPARED	RETAINING RING (5MM)
4	23E14920	BELT D (REP 4.3)
5	20E28770	UPPER IDLER PULLEY
6	7E48460	SHUTTER IDLER
7	7E48450	LOWER IDLER PULLEY
8	NOT SPARED	SCREW (M3X6)
9	49E72000	BRACKET
10	809E2110	SPRING
11	NOT SPARED	SCREW (M2X10)
12	NOT SPARED	SCREW (M3X14)
13	110E7560	INTERLOCK SWITCH (REP 4.4)
14	162K35610	HARNESS
15	NOT SPARED	SCREW (M3X12)
16	809E2090	SPRING
17	110E7550	LASER INTERLOCK SWITCH (REP 4.4)
18	NOT SPARED	RIGHT SIDE FRAME

PL 4.6 TONER SOLENOID, MAG ROLL, CLEANER SOLENOIDS



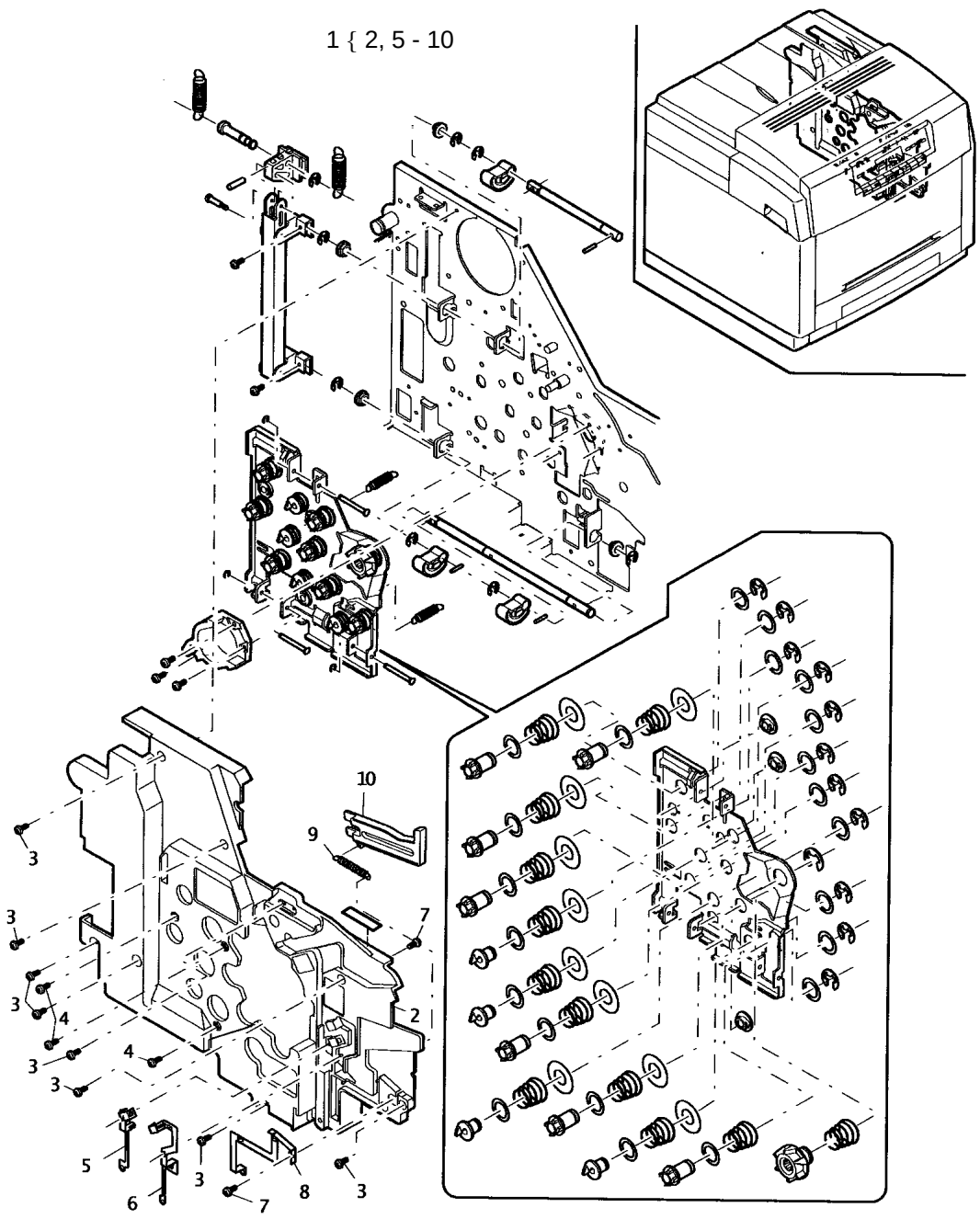
ITEM	PART	DESCRIPTION
1	NOT SPARED	RIGHT SIDE FRAME
2	NOT SPARED	SCREW
3	121E13350	TONER SOLENOID (Y) (REP 4.7)
4	NOT SPARED	SCREW
5	121E13360	MAG ROLL CLEANER SOLENOID (REP 4.7)
6	121E13370	TONER SOLENOID (M) (REP 4.7)
7	121E13380	TONER SOLENOID (C) (REP 4.7)
8	NOT SPARED	RETAINING RING
9	7E48540	IDLER GEAR
10	NOT SPARED	IDLER GEAR
11	NOT SPARED	CABLE CLAMP
12	162K35700	HARNESS

PL 5.1 CLUTCHES (MAG ROLL, TONER, MAG ROLL CLEANER)



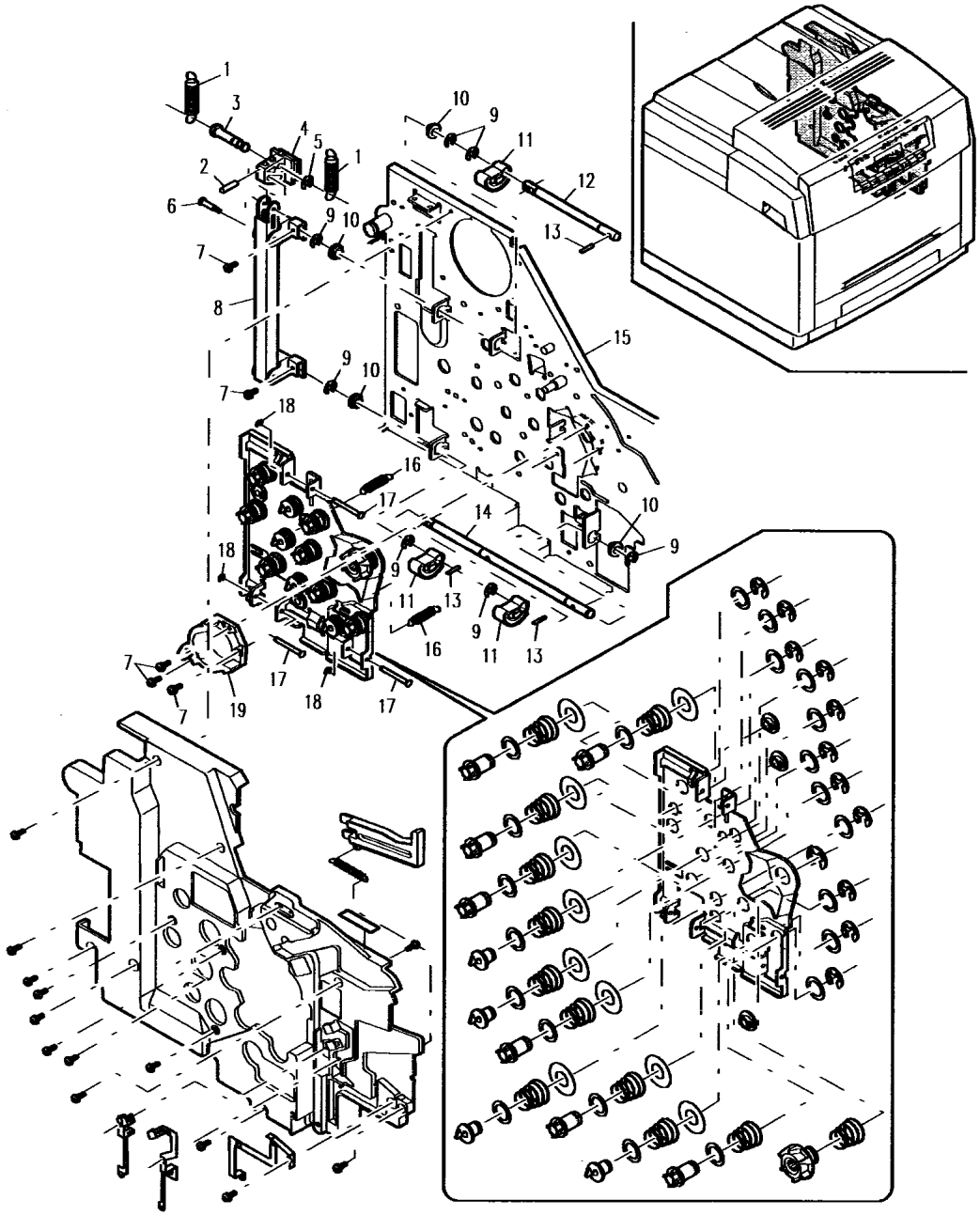
ITEM	PART	DESCRIPTION
1	NOT SPARED	RIGHT SIDE FRAME
2	NOT SPARED	DRIVES FRAME
3	NOT SPARED	RETAINING RING
4	13E12550	CLUTCH BEARING
5	NOT SPARED	RETAINING RING
6	7E48310	CLUTCH GEAR
7	809E1740	CLUTCH SPRING
8	16E12450	CLUTCH SLEEVE
9	8E5720	CLUTCH BOSS
10	7E48330	GEAR
11	809E1770	SPRING
12	16E12460	SLEEVE
13	7E48320	GEAR
14	NOT SPARED	SCREW
15	6E61580	SHAFT
16	121E13390	MAGNETIC CLUTCH (Y) (REP 5.2)
17	6E61650	SHAFT
18	121E13410	MAGNETIC CLUTCH (M) (REP 5.2)
19	121E13420	MAGNETIC CLUTCH (C) (REP 5.2)
20	6E61570	SHAFT
21	121E13430	MAGNETIC CLUTCH (K) (REP 5.2)
22	6E61640	SHAFT
23	6E61590	SHAFT
24	13E12510	BEARING
25	6E61560	SHUTTER SHAFT
26	NOT SPARED	SCREW
27	REFERENCE ONLY	TONER CLUTCH ASSY (C) (M) (Y) (REP 5.1)
28	REFERENCE ONLY	MAG ROLL CLEANER CLUTCH (REP 5.1)

PL 6.1 DRIVE COVER ASSEMBLY



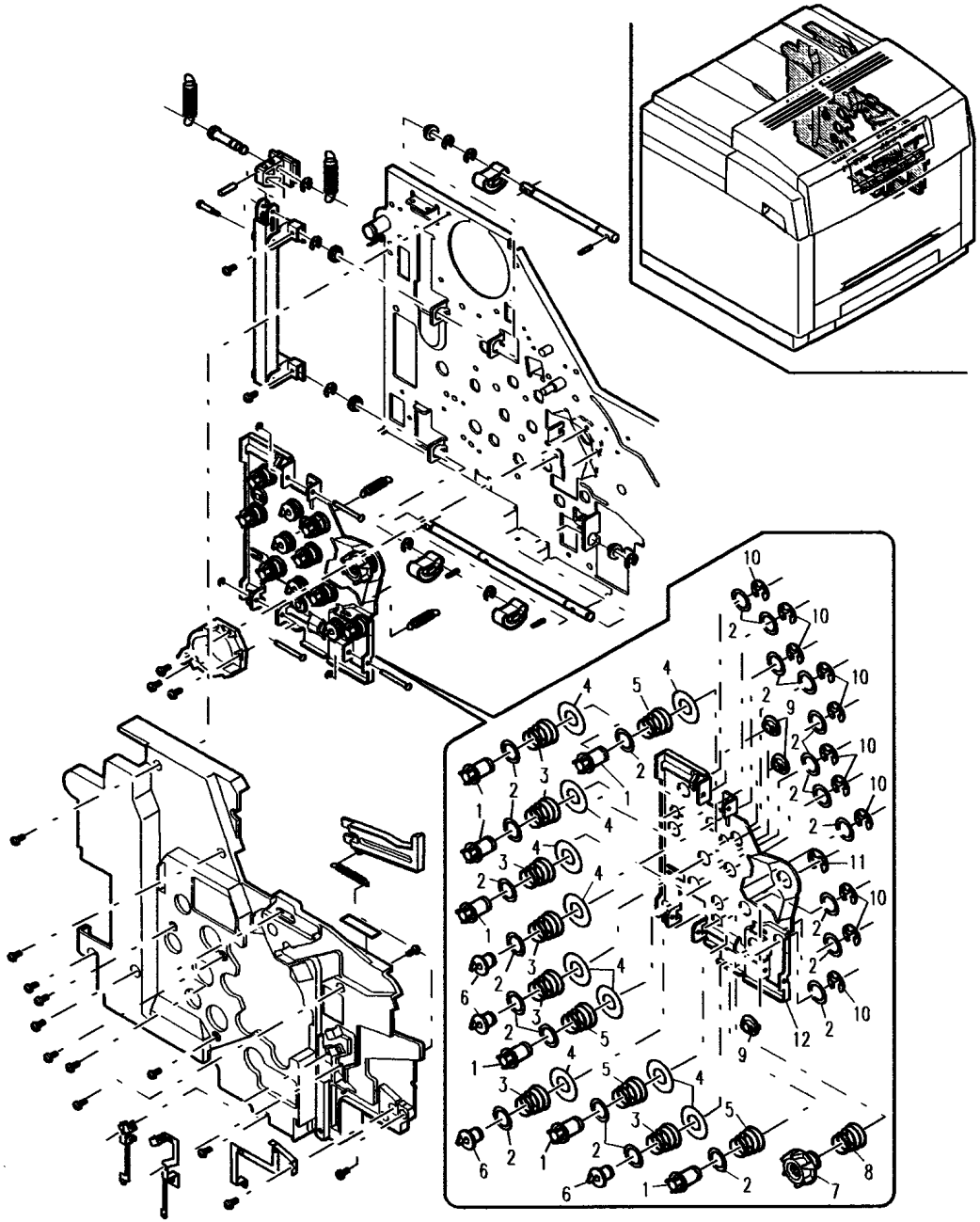
ITEM	PART	DESCRIPTION
1	NOT SPARED	DRIVE COVER ASSEMBLY
2	32E11510	DRIVE COVER
3	NOT SPARED	SCREW
4	NOT SPARED	SCREW
5	116E7400	BIAS TERMINAL (REP 6.1)
6	116E7390	CHARGE TERMINAL (REP 6.1)
7	(P/O ITEM 1)	SCREW
8	116E7380	TRANS DRUM TERMINAL (REP 6.1)
9	809E1840	SPRING
10	11E7380	PHOTORECEPTOR LEVER

PL 6.2 SLIDE CAM ASSEMBLY, INNER DRIVE FRAME



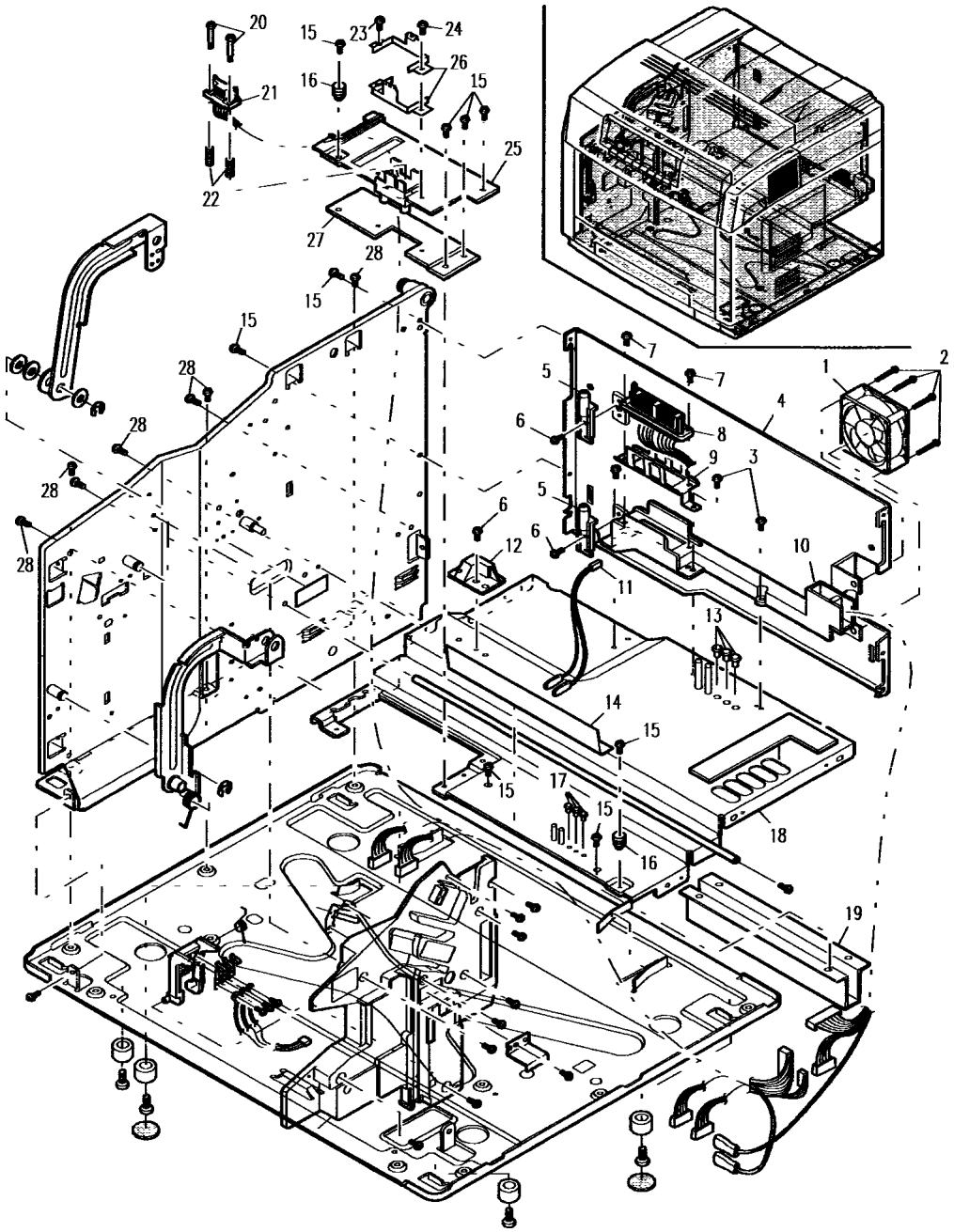
ITEM	PART	DESCRIPTION
1	809E1670	SLIDE SPRING
2	29E27460	PIN
3	29E27450	LINK STUD
4	15E59930	LINK PLATE
5	NOT SPARED	RETAINING RING
6	NOT SPARED	SCREW
7	NOT SPARED	SCREW
8	12E8400	LINK
9	NOT SPARED	RETAINING RING
10	NOT SPARED	BEARING
11	8E5730	SLIDE CAM (REP 6.2)
12	6E61600	UPPER SLIDE SHAFT
13	NOT SPARED	PIN
14	6E61610	LOWER SLIDE SHAFT
15	NOT SPARED	RIGHT SIDE FRAME
16	809E1810	RETURN SPRING
17	29E27500	LINK SHAFT
18	NOT SPARED	RETAINING RING
19	32E11450	GUIDE

PL 6.3 INNER DRIVE FRAME COMPONENTS



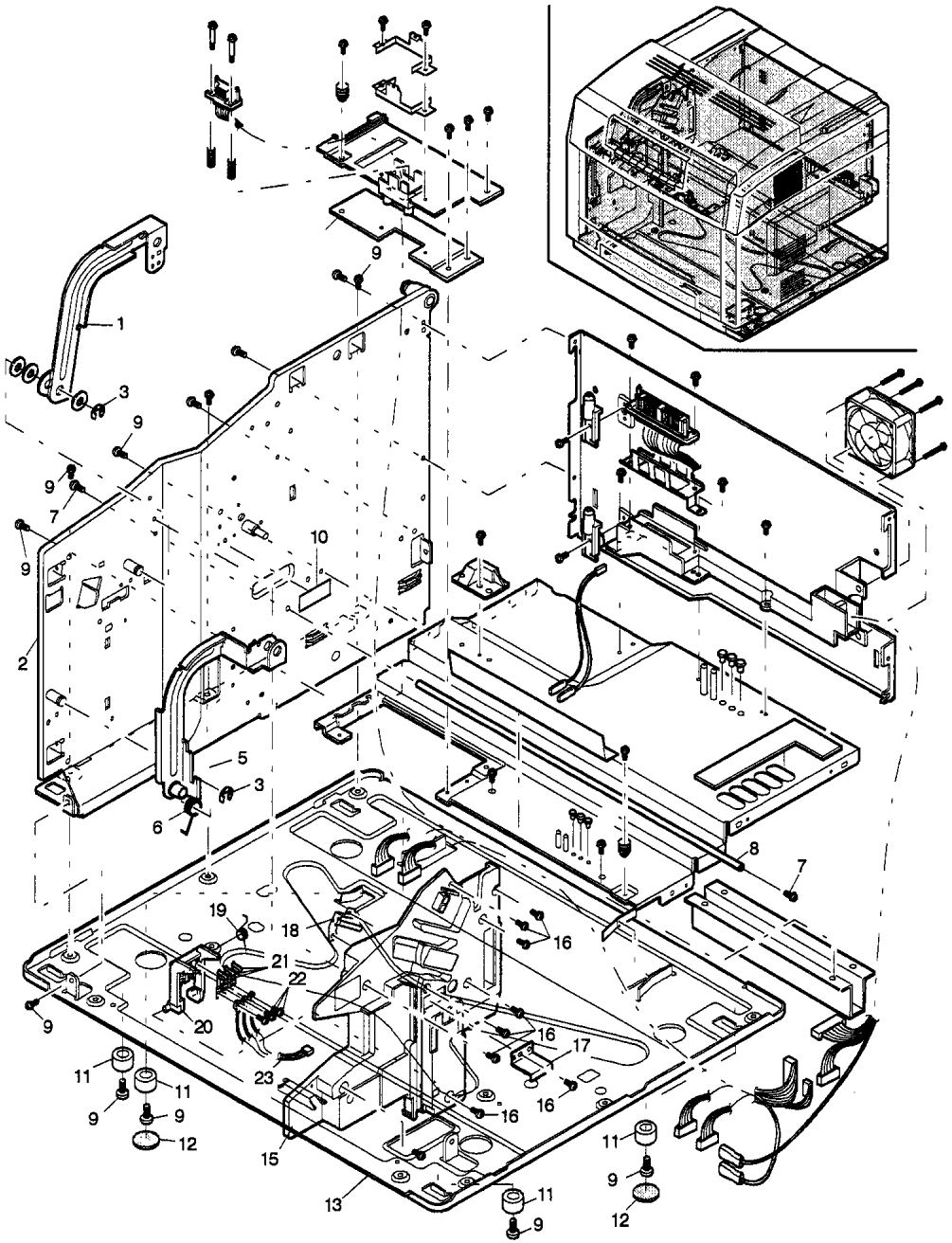
ITEM	PART	DESCRIPTION
1	5E12200	DRIVE DOG (C) (M) (Y)
2	28E12160	WASHER
3	809E2030	CAM SPRING
4	28E12170	WASHER
5	809E5600	SPRING
6	8E5750	CAM
7	5E12210	DRIVE DOG (K)
8	809E5610	SPRING
9	13E13380	BEARING
10	NOT SPARED	RETAINING RING
11	NOT SPARED	RETAINING RING
12	15E64310	FRAME SIDE PLATE

PL 7.1 DEVELOPER CONNECTORS, BRACKET



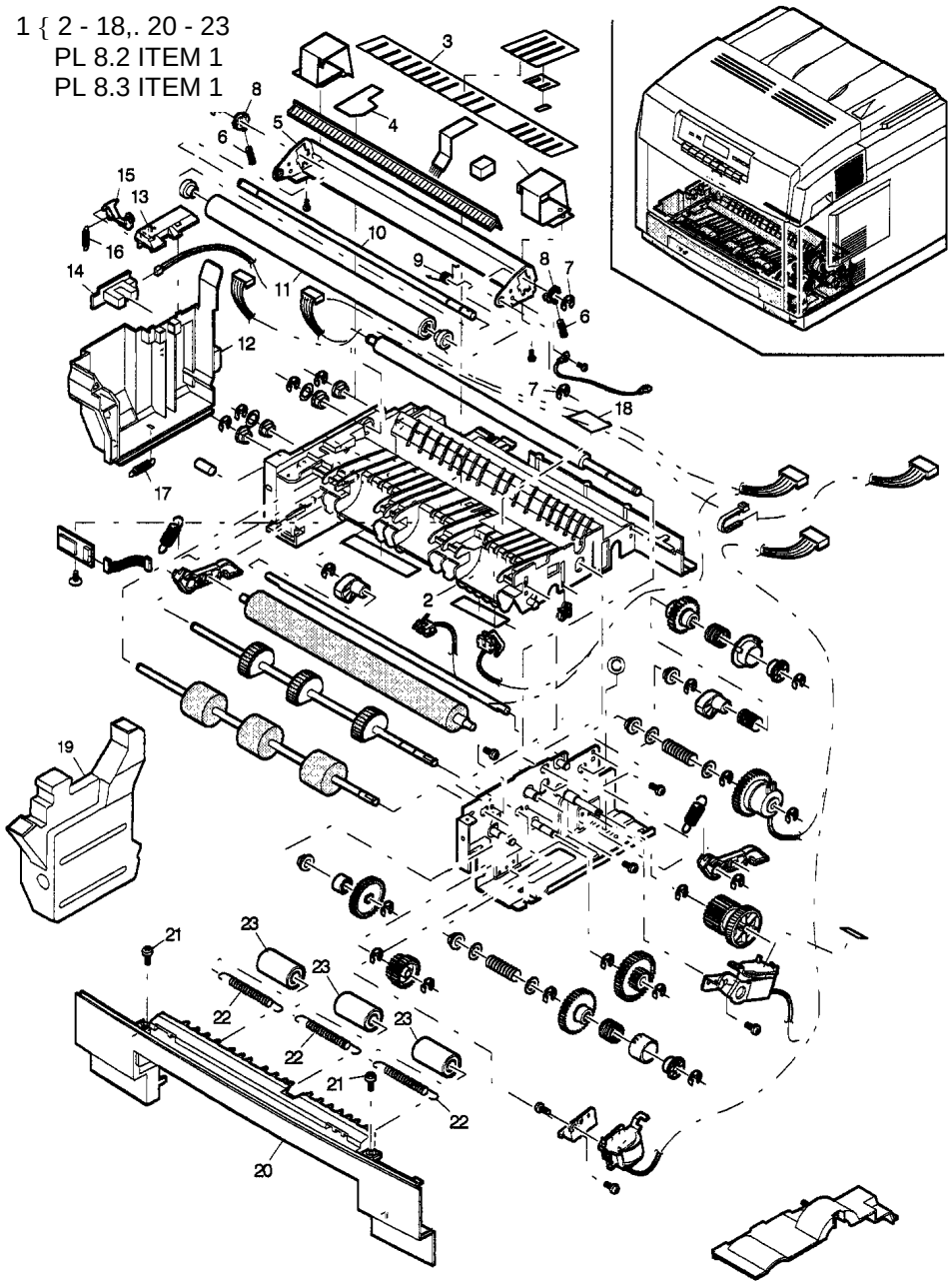
ITEM	PART	DESCRIPTION
1	NOT SPARED	FAN
2	NOT SPARED	SCREW (M3X30)
3	NOT SPARED	SCREW (M3X6)
4	NOT SPARED	PLATE
5	3E42100	TONER HINGE (K)
6	NOT SPARED	SCREW (M3X8)
7	NOT SPARED	SCREW (M3X10)
8	162K29330	HARNESS
9	116E7360	GROUND CLIP
10	32E11460	CONNECTOR BRACKET
11	162K35590	HARNESS
12	17E8360	STOPPER
13	NOT SPARED	NYLON RIVET
14	118E13770	PROTECTOR SHEET
15	NOT SPARED	SCREW (M3X8)
16	809E1970	SPRING (K)
17	NOT SPARED	RIVET
18	NOT SPARED	SUPPORT PLATE
19	NOT SPARED	HARNESS GUIDE
20	NOT SPARED	SCREW
21	162K29300	HARNESS
22	809E5620	SLIDE SPRING
23	NOT SPARED	SCREW (M3X6)
24	NOT SPARED	SCREW (M3X10)
25	32E11470	HARNESS PLATE
26	116E7350	GROUND CLIP
27	15E64350	SUPPORT PLATE
28	NOT SPARED	SCREW (M4X6)

PL 7.2 PRINT DRUM CONNECTORS, BRACKETS



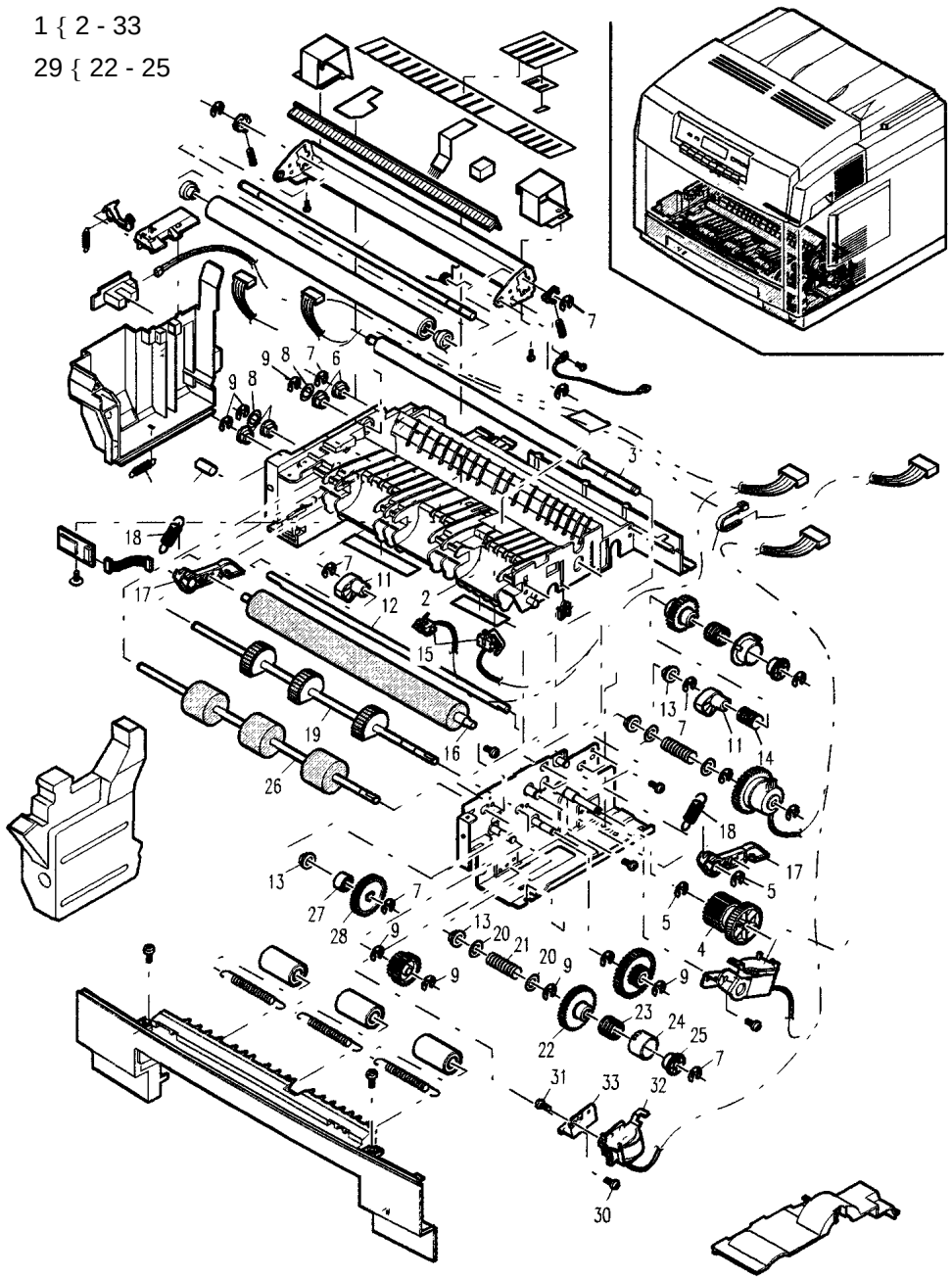
ITEM	PART	DESCRIPTION
1	12E8410	UPPER LINK
2	NOT SPARED	LEFT SIDE FRAME
3	NOT SPARED	RETAINING RING (7MM)
4	NA	
5	12E8420	LOWER LINK
6	NOT SPARED	LOWER LINK SPRING
7	NOT SPARED	SCREW
8	NOT SPARED	TIE ROD
9	NOT SPARED	SCREW (M4X6)
10	118E13750	INSULATOR SHEET
11	17E8350	FOOT
12	19E37480	PAD
13	NOT SPARED	BASE PLATE
14	NA	
15	32E11480	LEFT GUIDE
16	(PO ITEM 14)	SCREW (M3X6)
17	(PO ITEM 14)	EARTH PLATE
18	15E59940	GROUND SPRING
19	809E1730	DETECT SPRING
20	11E7360	PHOTORECEPTOR DETECT LEVER
21	116E7370	DETECT SPRING CLIP
22	(PO ITEM 14)	SCREW (M3X6)
23	162K35620	HARNESS

PL 8.1 PAPER FEED ASSEMBLY: PART 1 OF 3



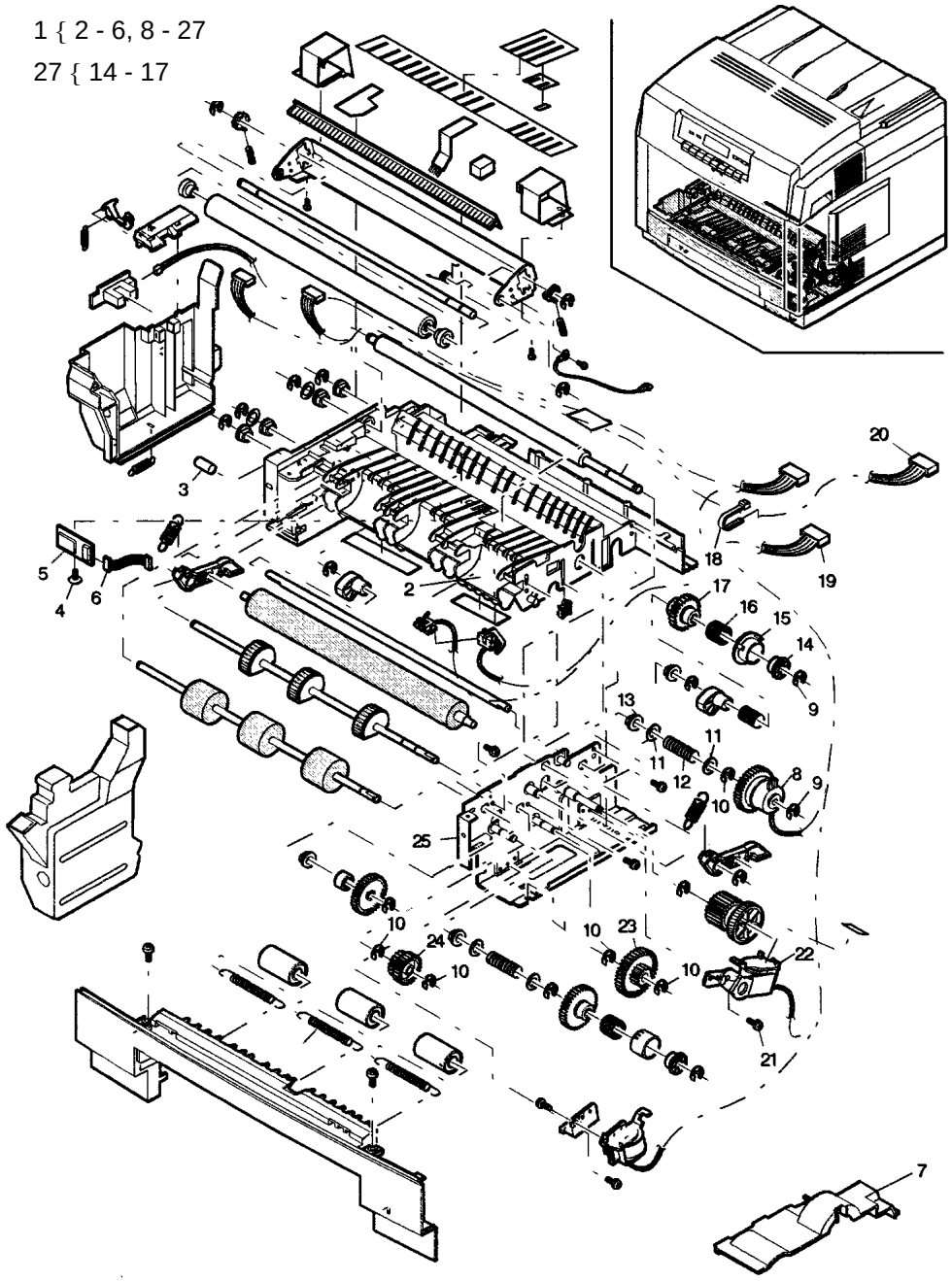
ITEM	PART	DESCRIPTION
1	22K53880	PAPER FEED ASSEMBLY (REP 8.2)
2	(P/O ITEM 1)	LOWER GUIDE
3	55E38931	LOWER SHEET
4	118E13780	LOWER GUIDE SHEET
5	1E46940	GUIDE
6	809E1760	SPRING
7	(P/O ITEM 1)	RETAINING RING (5MM)
8	13E13370	BEARING
9	809E5640	GUIDE SPRING
10	6E61510	ROLLER SHAFT
11	22E20990	GROUNDING ROLLER
12	600K65260	TONER SLIDE BOX ASSY
13	(P/O ITEM 12)	SENSOR COVER
14	(P/O ITEM 12)	SENSOR
15	(P/O ITEM 12)	WASTE TONER ARM
16	(P/O ITEM 12)	WASTE TONER SPRING
17	809E1720	SLIDE SPRING
18	118E13760	INSULATOR
19	8R7748	TONER BOTTLE CUST PURCHASE ITEM
20	38E17380	PAPER GUIDE (REP 8.1)
21	(P/O ITEM 1)	SCREW (M3X8)
22	809E2000	SPRING
23	22E21030	ROLLER

PL 8.2 PAPER FEED ASSEMBLY: PART 2 OF 3



ITEM	PART	DESCRIPTION
1	REF:PL8.1, ITEM 1	PART OF PAPER FEED ASSEMBLY
2	(P/O ITEM 1)	LOWER GUIDE
3	(P/O ITEM 1)	UPPER REGISTRATION ROLLER
4	7E48530	GEAR
5	(P/O ITEM 1)	RETAINING RING (7MM)
6	(P/O ITEM 1)	BUSHING
7	(P/O ITEM 1)	RETAINING RING (4MM)
8	(P/O ITEM 1)	WASHER
9	(P/O ITEM 1)	RETAINING RING (5MM)
10	NA	
11	8E5740	CAM
12	6E61530	CAM SHAFT
13	13E12570	BUSHING
14	809E2140	CAM SPRING
15	130E8000	REGISTRATION / PAPER TRAY OUT SENSOR (REP 8.3,8.4)
16	22E21000	LOWER REGISTRATION ROLLER (REP 8.11)
17	11E7390	REGISTRATION LEVER
18	809E1860	REGISTRATION SPRING
19	22E21010	FEED ROLLER (REP 8.12)
20	(P/O ITEM 1)	WASHER
21	809E2050	SPRING
22	7E48510	GEAR
23	809E2080	SPRING
24	16E12470	SLEEVE
25	8E5720	CLUTCH BOSS (P/O ITEM 1)
26	22E21020	PAPER DRIVE ROLLER (REP 8.8)
27	5E12180	ONE WAY CLUTCH
28	7E48500	GEAR
29	REF ONLY	FEED CLUTCH ASSEMBLY (REP 8.5)
30	(P/O ITEM 1)	SCREW (M3X6)
31	(P/O ITEM 1)	SCREW (M4X8)
32	121E13450	FEED SOLENOID (REP 8.5)
33	(P/O ITEM 1)	SOLENOID BRACKET

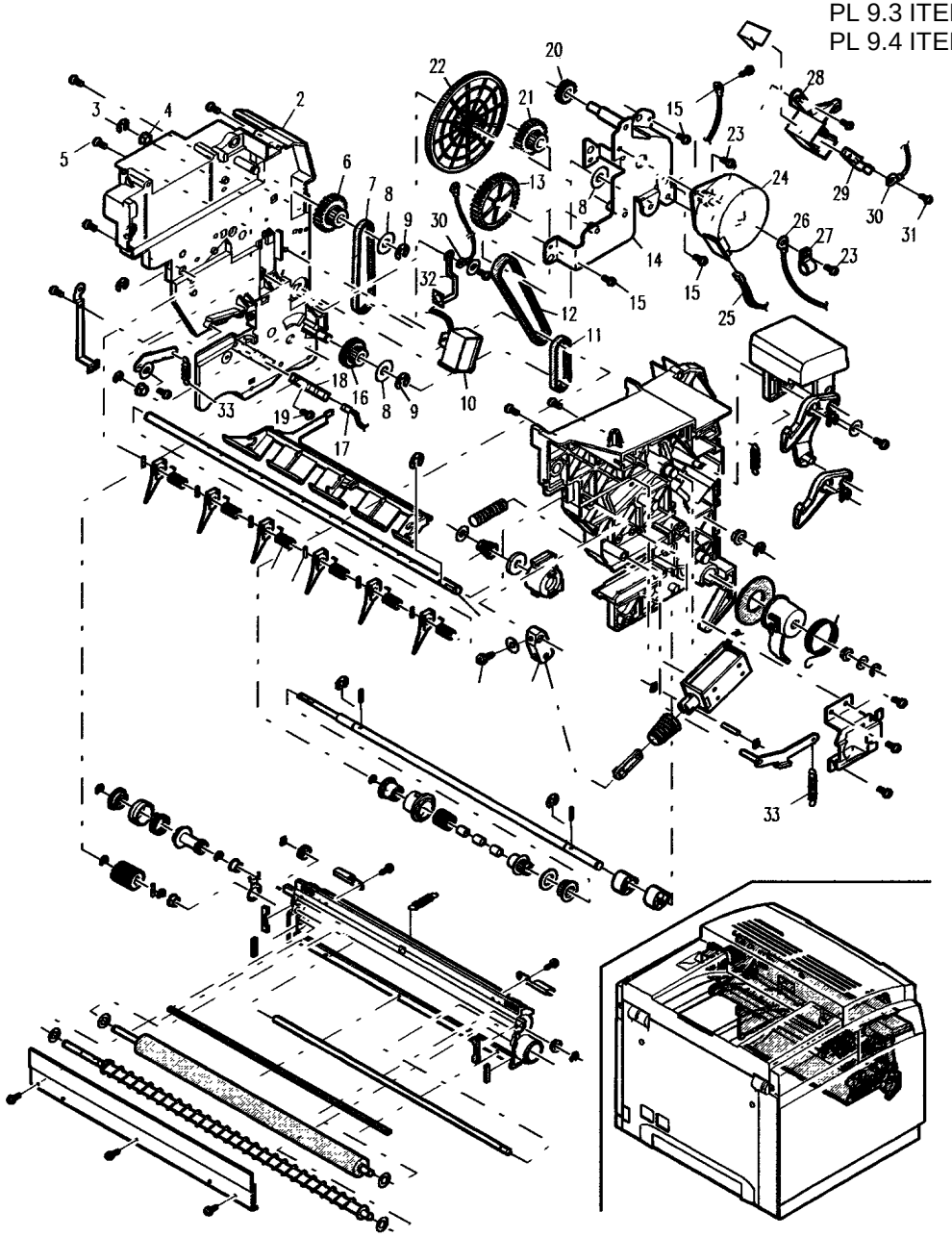
PL 8.3 PAPER FEED ASSEMBLY: PART 3 OF 3



ITEM	PART	DESCRIPTION
1	REF: PL8.1 ITEM 1	PART OF PAPER FEED ASSEMBLY
2	(P/O ITEM 1)	LOWER GUIDE
3	(P/O ITEM 1)	PIVOT STUD
4	(P/O ITEM 1)	SCREW (M3X8)
5	(P/O ITEM 1)	TEMP/HUMIDITY SENSOR
6	162K35660	SENSOR HARNESS
7	55E37750	CLUTCH COVER
8	121E13470	REGISTRATION CLUTCH
	(P/O ITEM 1)	(REP 8.6)
9	(P/O ITEM 1)	RETAINING RING (4MM)
10	(P/O ITEM 1)	RETAINING RING (5MM)
11	(P/O ITEM 1)	WASHER
12	809E2120	CLUTCH SPRING
13	13E12570	BUSHING
14	(P/O ITEM 1)	CLUTCH BOSS
15	16E12490	SLEEVE
16	809E2150	SPRING
17	7E48570	GEAR
18	(P/O ITEM 1)	CABLE TIE
19	(P/O ITEM 1)	CONNECTOR
20	162K35640	VIDEO HARNESS
21	(P/O ITEM 1)	SCREW (M3X8)
22	121E13460	GROUNDING ROLL SOLENOID
23	7E48520	GEAR
24	7E48490	GEAR
25	(P/O ITEM 1)	SIDE PLATE
26	NA	
27	(P/O ITEM 1)	GRND ROLL CLUTCH (REF ONLY) (REP 8.7)

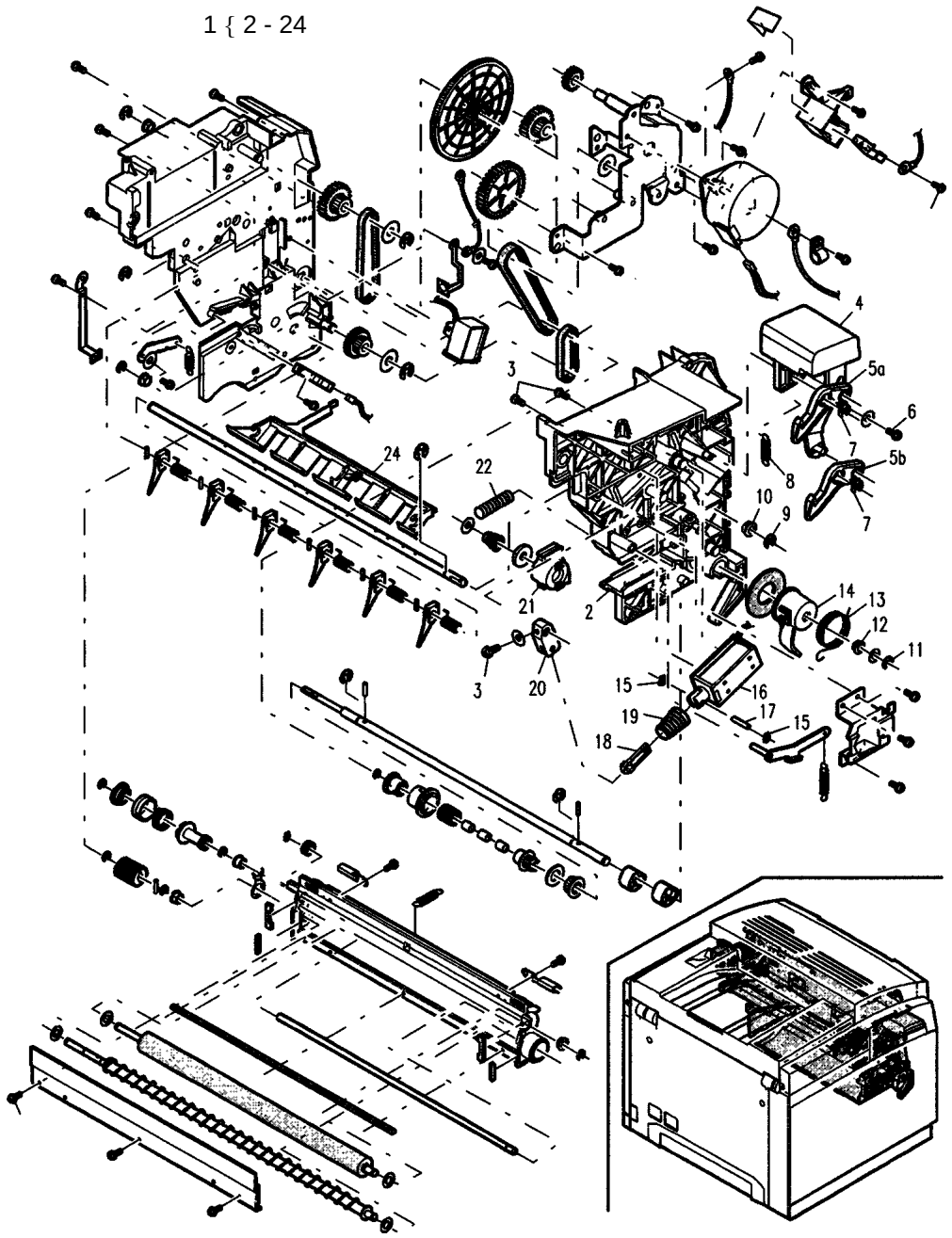
PL 9.1 FUSER, TD CLEANER DRIVES

1 { 2 - 33
PL 9.2 ITEM 1
PL 9.3 ITEM 1
PL 9.4 ITEM 1



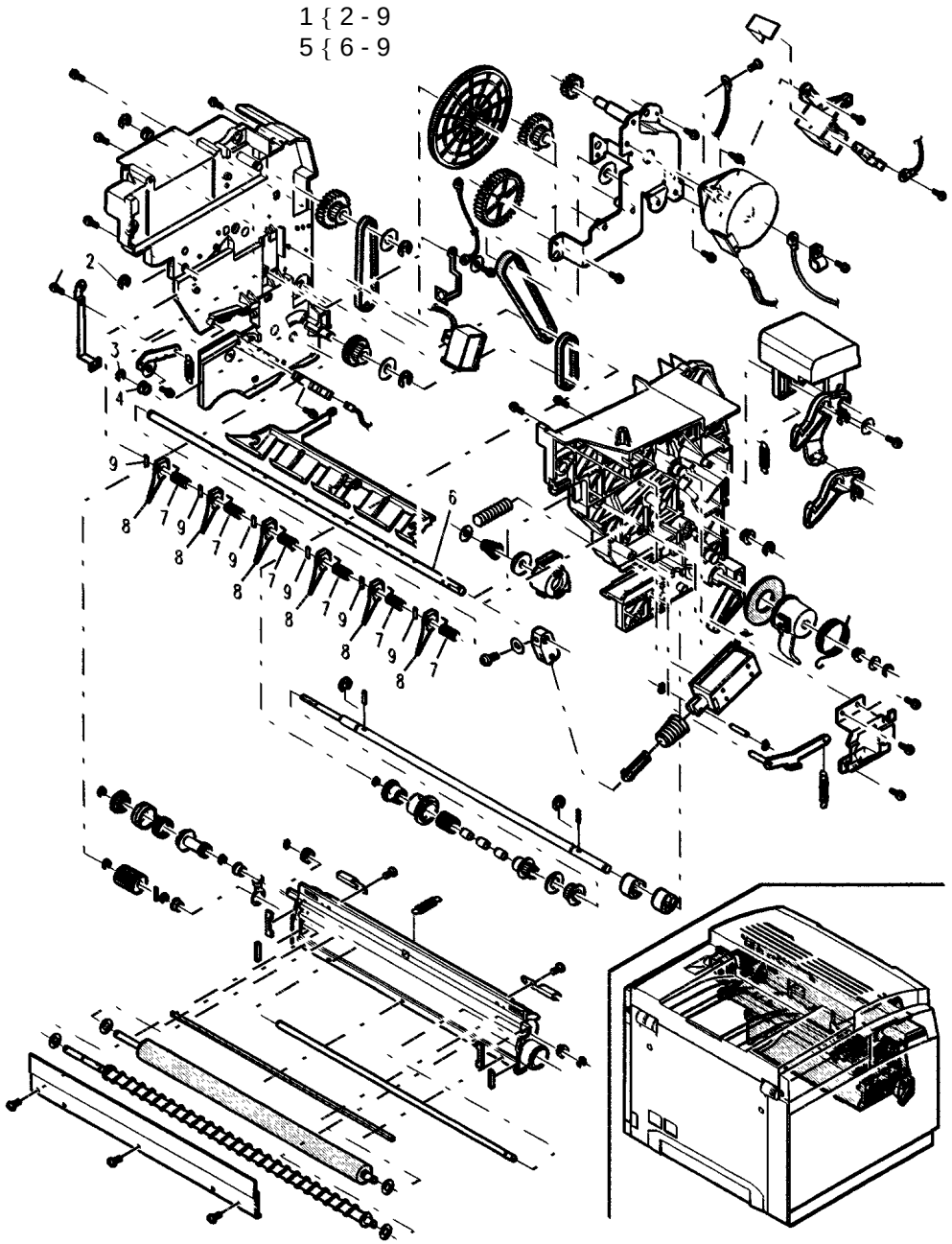
ITEM	PART	DESCRIPTION
1	22K53890	TRANSFER FRAME ASSEMBLY
2	1E43740	RIGHT TRANSFER FRAME
3	(P/O ITEM 1)	RETAINING RING (2MM)
4	13E13360	BEARING
5	(P/O ITEM 1)	SCREW (M3X6)
6	7E48280	GEAR
7	23E14880	TRANSFER BELT
8	28E12140	WASHER
9	(P/O ITEM 1)	RETAINING RING (5MM)
10	121E13400	TR DRUM CLEANING SOLENOID (REP 9.2)
11	23E14910	BELT B
12	23E14900	BELT A
13	7E48380	FUSER IDLER GEAR
14	15E64300	FUSER MOTOR PLATE
15	(P/O ITEM 1)	SCREW (M3X8)
16	7E48340	IDLER GEAR
17	162K35580	HARNESS
18	130E7970	TR DRUM HOME POSITION SENSOR
19	(P/O ITEM 1)	SCREW (M3X14)
20	7E48360	IDLER GEAR
21	7E48370	CLEANER GEAR
22	7E48350	FUSER GEAR
23	(P/O ITEM 1)	SCREW (M4X6)
24	127E10910	FUSER MOTOR
25	162K29320	FUSER HARNESS
26	162K35630	HARNESS
27	(P/O ITEM 1)	CABLE CLAMP
28	49E84450	BRACKET
29	115E5840	CONTACT
30	162K35710	HARNESS
31	(P/O ITEM 1)	SCREW (M3X6)
32	115E5850	CONTACT
33	809E5770	SPRING

PL 9.2 TRANSFER FRAME (LEFT)



ITEM	PART	DESCRIPTION
1	REF: PL9.1, ITEM 1	PART OF TRANSFER FRAME ASSEMBLY
2	1E43760	LEFT TRANSFER FRAME
3	(P/O ITEM 1)	SCREW (M3X6)
4	12E8150	LEFT RELEASE LINK
5A	7E48440	LOCK PAWL UPPER
5B	7E63600	LOCK PAWL LOWER
6	(P/O ITEM 1)	SCREW (M3X6)
7	(P/O ITEM 1)	RETAINING RING (7MM)
8	809E5680	TRANSPORT LOCK SPRING
9	(P/O ITEM 1)	RETAINING RING (2MM)
10	(P/O ITEM 1)	BUSHING
11	(P/O ITEM 1)	RETAINING RING (4MM)
12	13E12520	BEARING
13	809E2020	WASTE SPRING
14	55E37740	WASTE SHUTTER
15	(P/O ITEM 1)	RETAINING RING
16	121E13440	STRIPPER SOLENOID
17	29E27470	PIN
18	31E8360	STRIPPER LINK
19	809E2040	STRIPPER SOL SPRING
20	31E8370	STRIPPER ARM
21	13E12590	LEFT DRUM BEARING
22	809E2060	TR DRUM SPRING
23	NA	
24	120E15810	ACTUATOR

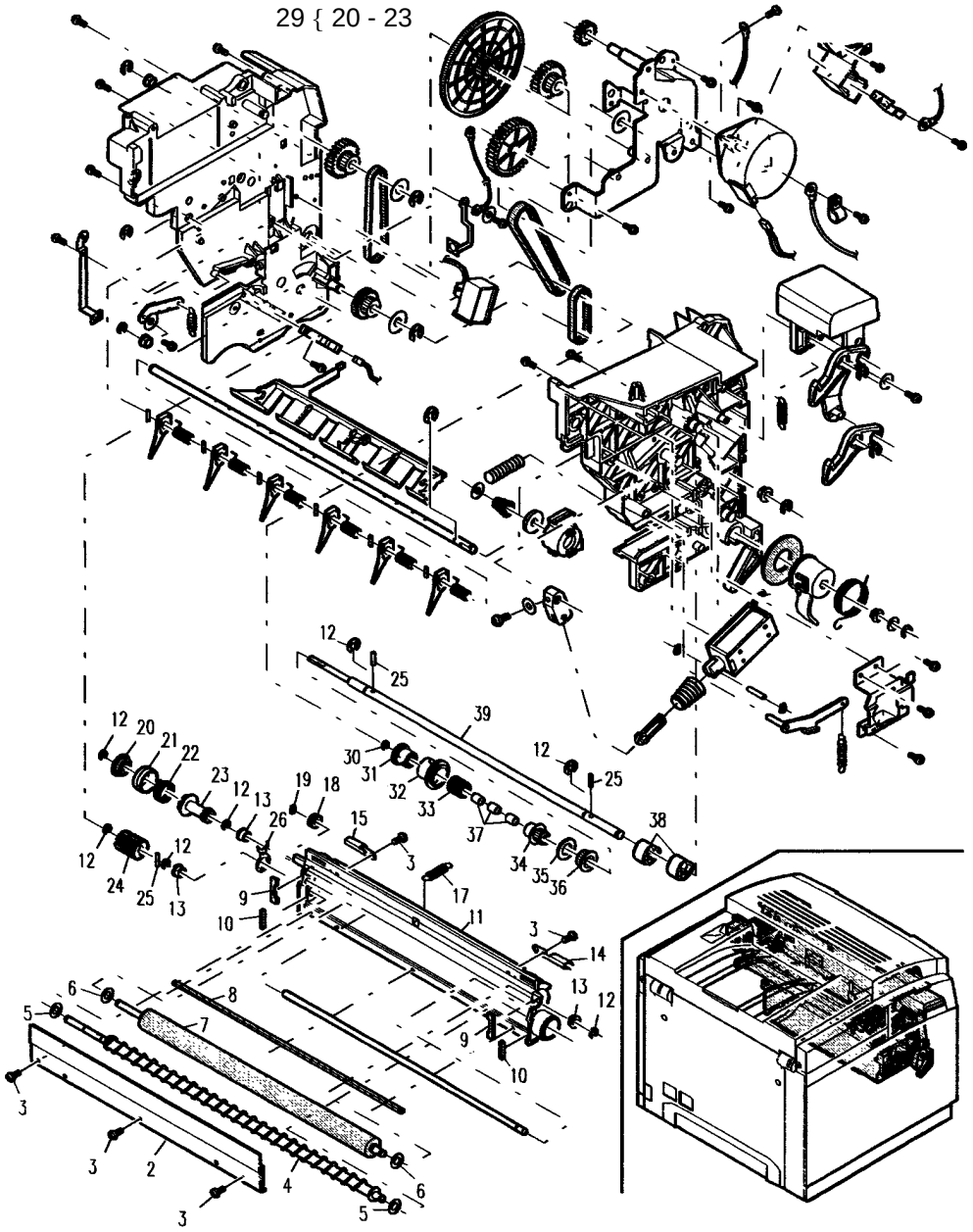
PL 9.3 STRIPPER FINGERS



ITEM	PART	DESCRIPTION
1	REF: PL9.1, ITEM 1	PART OF TRANSFER FRAME ASSEMBLY
2	(P/O ITEM 1)	RETAINING RING (7MM)
3	(P/O ITEM 1)	RETAINING RING (4MM)
4	13E12520	BEARING
5	19K4100	STRIPPER FINGER ASSY (REP 9.1)
6	6E61550	SHAFT
7	809E2100	STRIPPER FINGER SPRING
8	19E36010	STRIPPER FINGER
9	29E27440	STRIPPER FINGER PIN

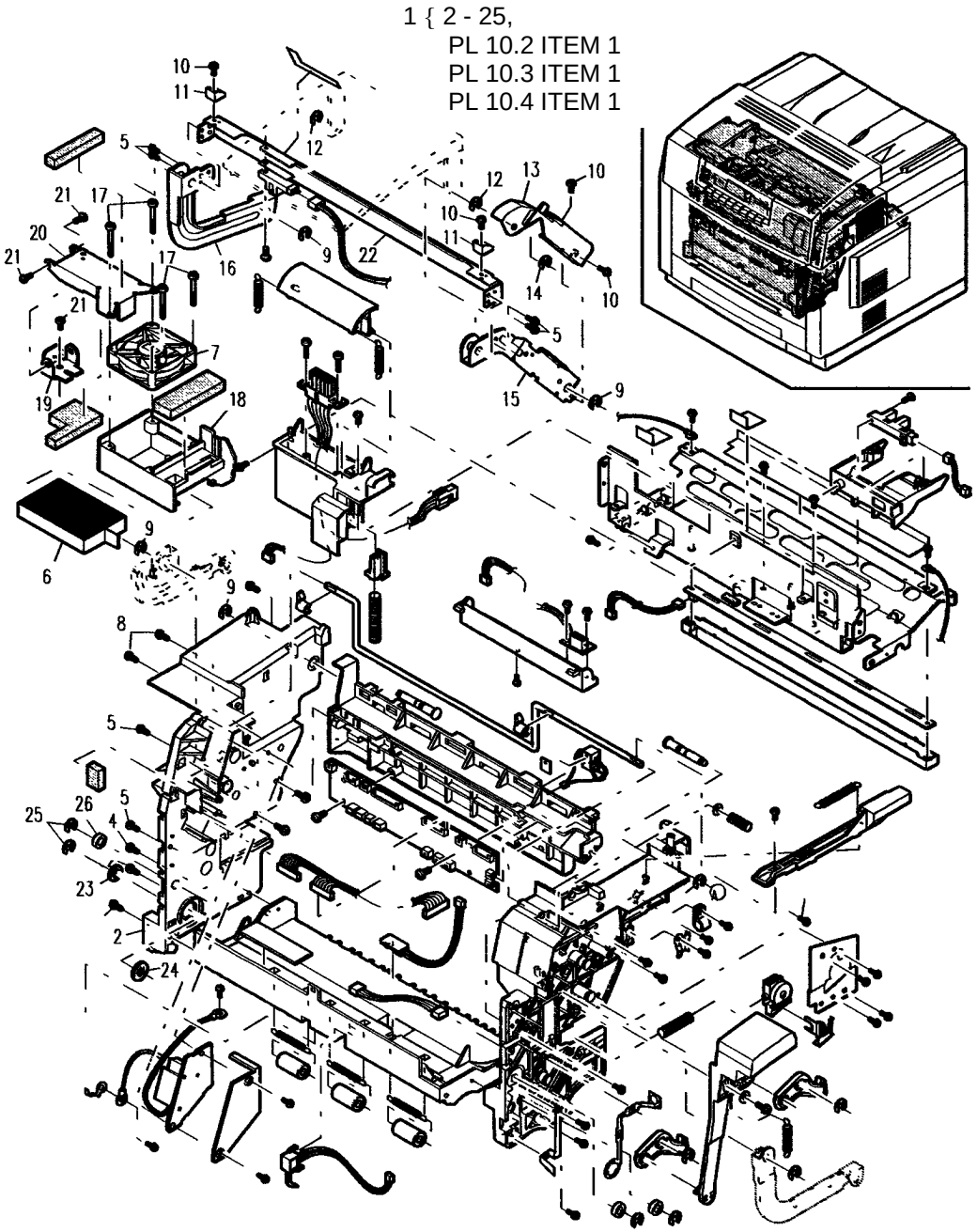
PL 9.4 TRANSFER DRUM CLEANER, CLUTCH AND SHAFT

1 { 2 - 39
27 { 12, 25, 30 - 39
28 { 2 - 26
29 { 20 - 23



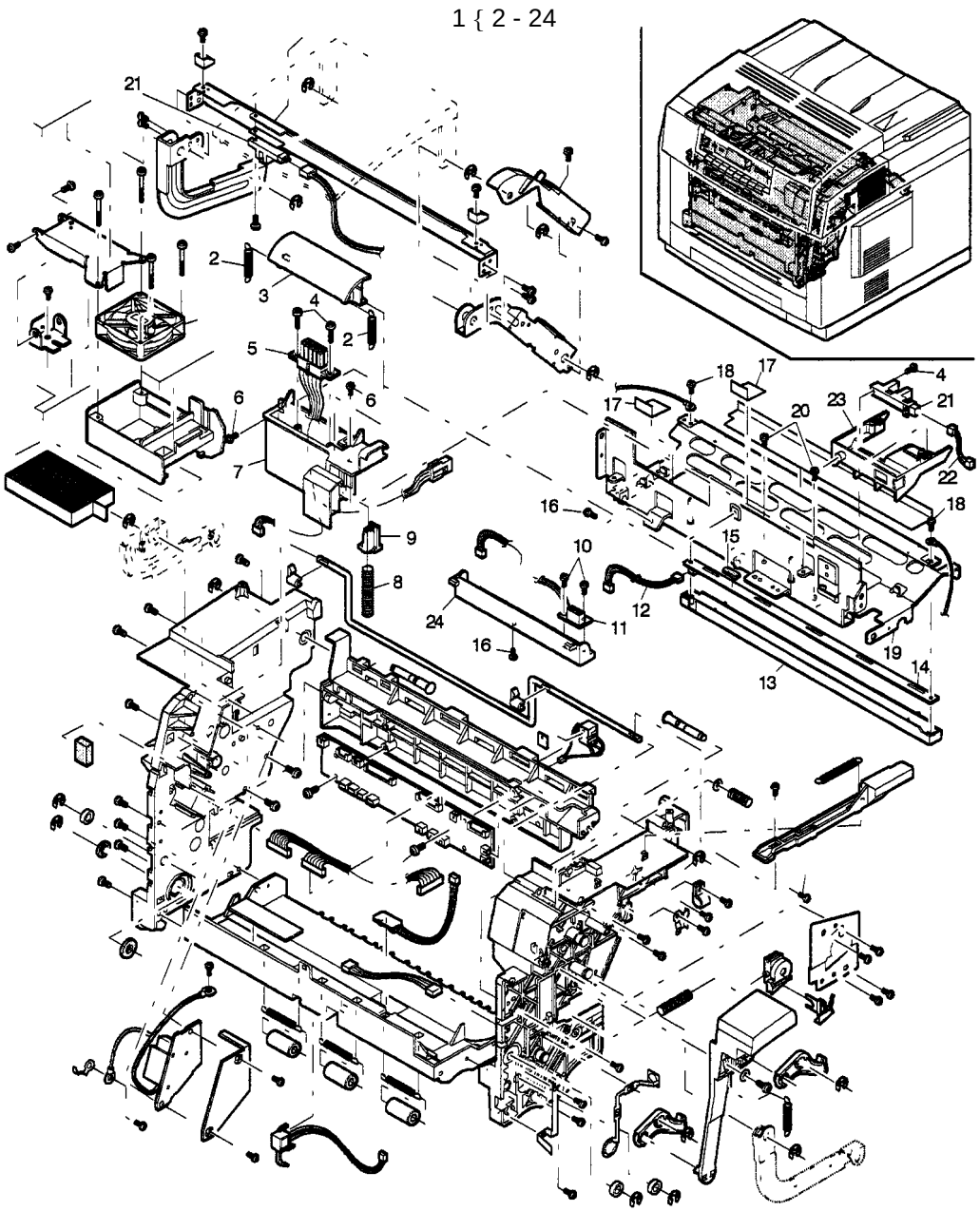
ITEM	PART	DESCRIPTION
1	REF: PL9.1, ITEM 1	PART OF TRANSFER FRAME ASSEMBLY
2	15E59970	TD CLEANING BLADE (REP 9.6)
3	(P/O ITEM 28)	SCREW (M3X6)
4	26E60290	AUGER
5	35E43370	SEAL
6	35E41720	CLEANER BRUSH SEAL
7	42E1390	(REP 9.7)TD CLEANING BRUSH
8	35E41710	CLEANER BLADE SEAL
9	35E41690	SEAL
10	35E41700	SEAL
11	48E53750	CLEANER CASE
12	(P/O ITEM 1)	RETAINING RING (4MM)
13	13E12520	BEARING
14	809E2190	LEFT SPRING
15	809E2200	RIGHT SPRING
16	NOT SHOWN	SHEET
17	809E2180	CLEANER SPRING
18	7E48580	IDLER GEAR
19	(P/O ITEM 28)	RETAINING RING
20	8E5780	CLEANER BOSS
21	16E12500	CLEANER SLEEVE
22	809E2210	CLEANER SPRING
23	7E48590	CLEANER GEAR
24	7E48600	AUGER GEAR
25	29E25290	PIN
26	15E59960	GROUND PLATE
27	5K4960	TD CLEANER CLUTCH ASSY (REP 9.3)
28	600K71720	TD CLEANER ASSY **C55** (REP 9.4)
	600K75290	TD CLEANER ASSY **NC60** (REP 9.4)
29	(P/O ITEM 28)	TD CLEANER BRUSH CLUTCH
30	(P/O ITEM 28)	RETAINING RING (2MM)
31	(P/O ITEM 27)	CLUTCH BOSS
32	(P/O ITEM 27)	CLUTCH SLEEVE
33	(P/O ITEM 27)	CLUTCH SPRING
34	(P/O ITEM 27)	GEAR
35	(P/O ITEM 27)	WASHER
36	(P/O ITEM 27)	GEAR
37	(P/O ITEM 27)	BEARING
38	(P/O ITEM 27)	CAM
39	(P/O ITEM 27)	CAMSHAFT

PL 10.1 TRANSFER FRAME LEFT SIDE COMPONENTS



ITEM	PART	DESCRIPTION
1	22K53890	TRANSFER FRAME ASSEMBLY (SAME AS PL9.1 ITEM 1)
2	1E43760	LEFT FRAME
3	(P/O ITEM 1)	SCREW (M3X10)
4	(P/O ITEM 1)	SCREW (M3X6)
5	(P/O ITEM 1)	SCREW (M3X8)
6	53E5390	OZONE FILTER
7	127E10930	FUSER FAN
8	(P/O ITEM 1)	SCREW (M3X8)
9	(P/O ITEM 1)	RETAINING RING (7MM)
10	(P/O ITEM 1)	SCREW (M3X6)
11	14E32670	LOCK BLOCK
12	(P/O ITEM 1)	RETAINING RING (6MM)
13	101E13680	HARNESS COVER / INTERLOCK ACTUATOR
14	(P/O ITEM 1)	RETAINING RING (5MM)
15	(P/O ITEM 1)	RIGHT UPPER LINK
16	(P/O ITEM 1)	LEFT UPPER LINK
17	(P/O ITEM 1)	SCREW
18	15E64450	FAN HOUSING
19	(P/O ITEM 1)	BRACKET
20	120E15820	BRACKET
21	(P/O ITEM 1)	SCREW
22	49E84420	TRANSPORT LINK STAY
23	62E8750	SEAL
24	15E64440	SEAL
25	(P/O ITEM 1)	RETAINING RING
26	13E12570	BEARING

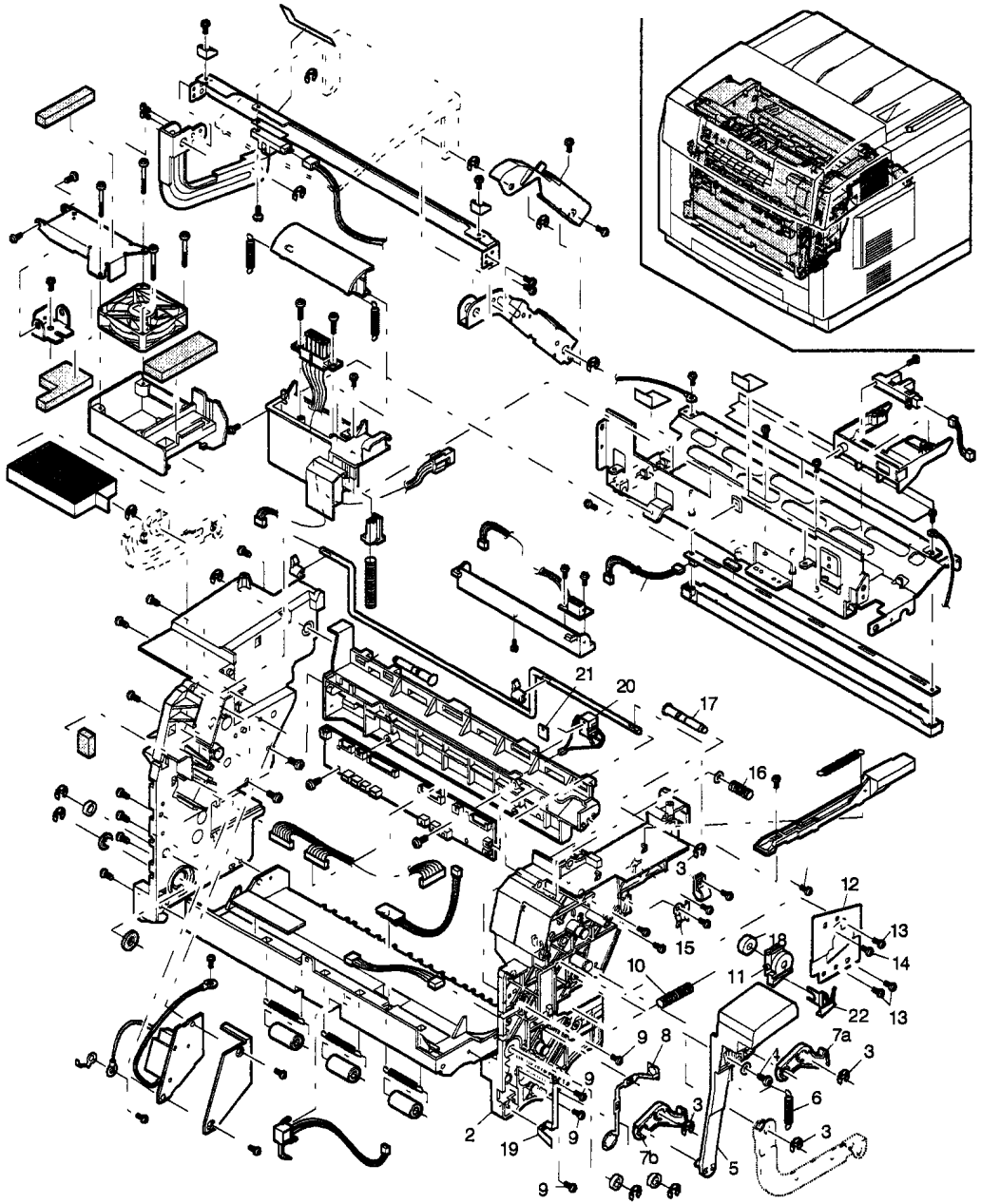
PL 10.2 TRANSFER FRAME UPPER COMPONENTS



ITEM	PART	DESCRIPTION
1	REF PL10.1, ITEM 1	PART OF TRANSFER FRAME ASSEMBLY
2	809E1830	SHUTTER SPRING A
3	55E37720	CONNECTOR SHUTTER
4	(P/O ITEM 1)	SCREW (M3X10)
5	162K29290	FUSER HARNESS
6	(P/O ITEM 1)	SCREW (M3X4)
7	49E71990	CONNECTOR BRACKET
8	809E1850	SHUTTER SPRING B
9	31E8350	FUSER ARM
10	(P/O ITEM 1)	SCREW (M3X6)
11	600K65270	GAMMA SENSOR KIT INCLUDES PL 10.4 ITEM 8
12	162K29310	ERASE HARNESS
13	48E43590	ERASE LAMP COVER
14	122E2170	ERASE LAMP
15	14E34360	LAMP SPACER
16	(P/O ITEM 1)	SCREW (M3X6)
17	55E38920	OIL PROTECT SHEET
18	(P/O ITEM 1)	SCREW (M3X8)
19	(P/O ITEM 1)	TRANSPORT FRAME
20	(P/O ITEM 1)	SCREW (M3X6)
21	130E7970	OIL SENSOR / TRANSPARENCY JAM SENSOR
22	162K35650	JAM SENSOR HARNESS
23	49E84400	DETECT LEVER PLATE
24	15E59950	GAMMA SENSOR PLATE

PL 10.3 TRANSFER FRAME RIGHT SIDE COMPONENTS

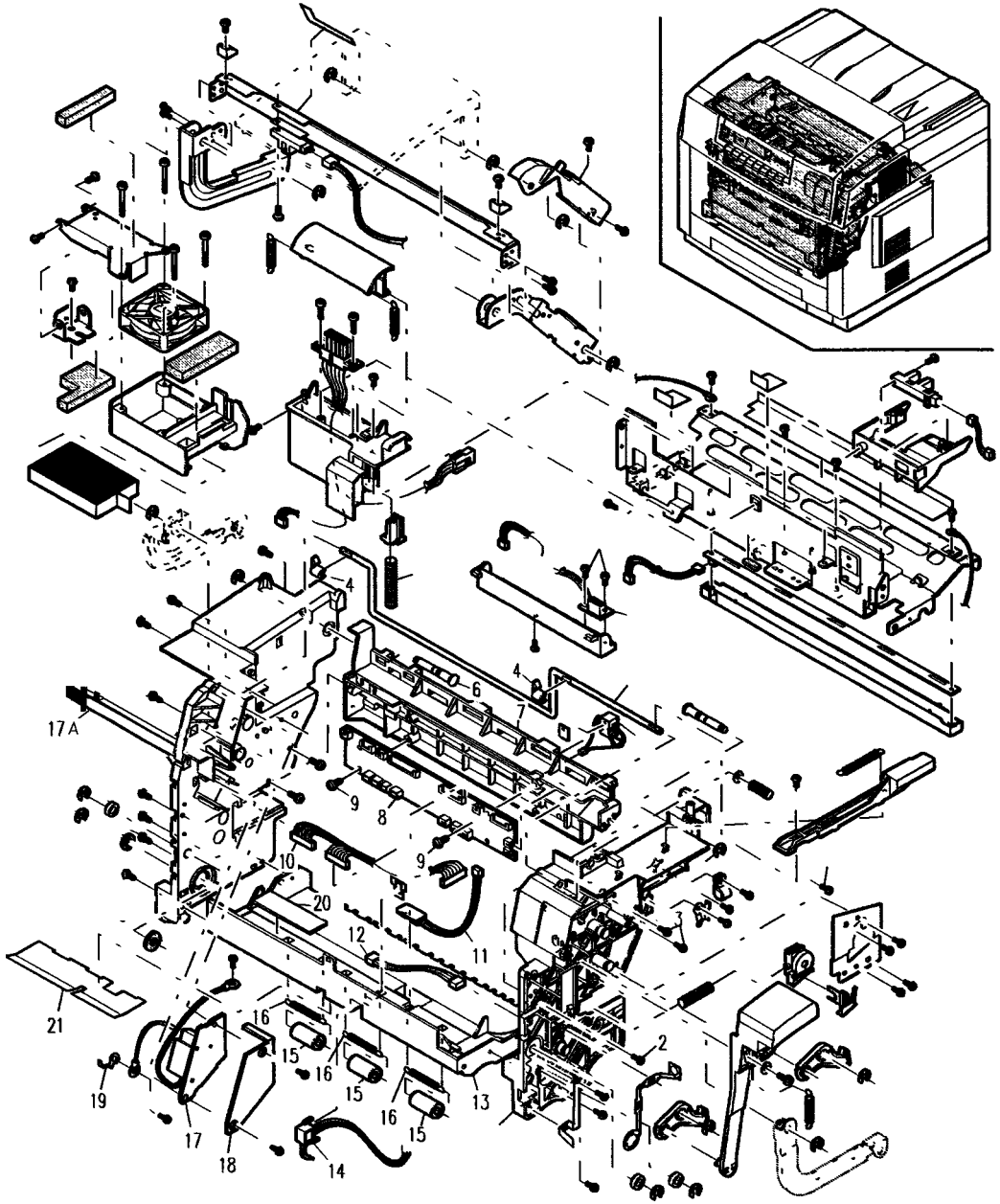
1 { 2 - 20



ITEM	PART	DESCRIPTION
1	REF PL10.1. ITEM 1	PART OF TRANSFER FRAME ASSEMBLY
2	(P/0 ITEM 1)	RIGHT FRAME
3	(P/0 ITEM 1)	RETAINING RING (7MM)
4	(P/0 ITEM 1)	SCREW (M3X6)
5	12E8160	RIGHT RELEASE LINK
6	(P/0 ITEM 1)	LOCK SPRING
7A	7E48440	RIGHT LOCK PAWL UPPER
7B	7E63600	RIGHT LOCK PAWL LOWER
8	115E5410	TRANSFER TERMINAL
9	(P/0 ITEM 1)	SCREW (M3X10)
10	809E2060	TRANSFER DRUM SPRING
11	13E12580	RIGHT TRANSFER DRUM BEARING
12	(P/0 ITEM 1)	COVER
13	(P/0 ITEM 1)	SCREW
14	(P/0 ITEM 1)	SCREW
15	(P/0 ITEM 1)	EARTH PLATE
16	809E2010	LOCK SPRING
17	29E27480	PIN
18	13E13420	BEARING
19	809E5780	SPRING
20	110E9930	DRUM CLEANING JAM SWITCH
21	115E6900	DRUM CLEANING SWITCH RETAINER
22	115E6900	BEARING ELECTRODE

PL 10.4 TRANSFER FRAME COMPONENTS (FRONT)

1 { 2 - 21
22 { 11, 13 - 16, 20, 21

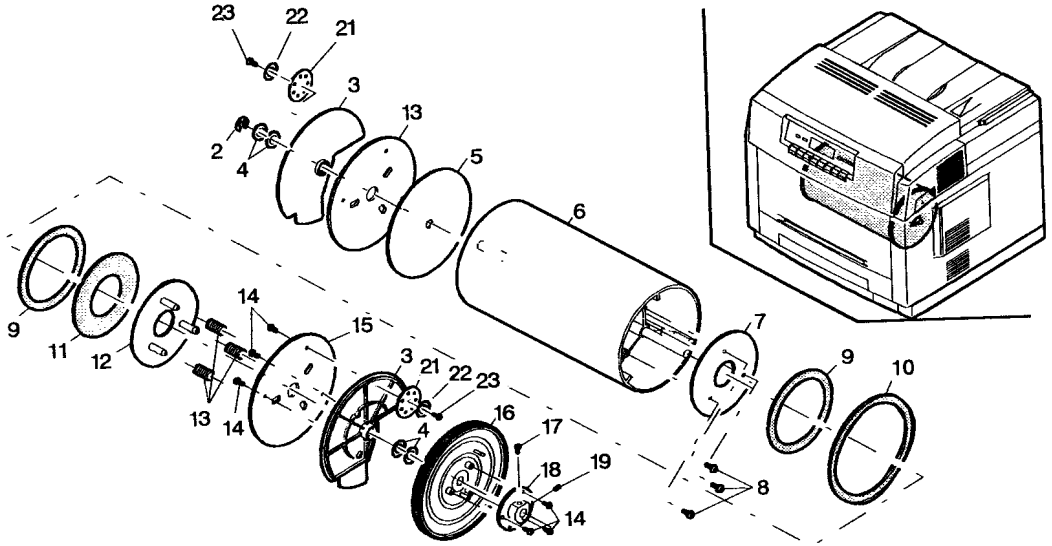


ITEM	PART	DESCRIPTION
1	REF PL10.1, ITEM 1	PART OF TRANSFER FRAME ASSEMBLY
2	(P/O ITEM 1)	SCREW (M3X10)
3	(P/O ITEM 1)	SCREW (M3X8)
4	7E48470	COVER PAWL
5	6E61630	LOCK SHAFT
6	29E27490	PIN
7	49E84430	PWB SUPPORT
8	PART OF 8A *	CONNECTOR PWB
8A	600K65270	GAMMA SENSOR REPAIR KIT
9	(P/O ITEM 1)	SCREW (M3X6)
10	162K29340	CONNECTOR PWB HARNESS
11	130E8010	TRANSPARENCY SENSOR (REP 10.3)
12	162K29350	TD POS HARNESS
13	38E18350	PAPER FEED GUIDE FRAME
14	110E7570	BYPASS SWITCH (REP 10.1)
15	(P/O ITEM 1)	PINCH ROLL
16	809E2000	PINCH ROLL SPRING
17	105K17050	TRANS DISCHARGE PS (REP 10.2)
17A	NOT SPARED	NEUTRALIZATION COROTRON
18	101E13720	COVER
19	115E5860	CONTACT
20	15E64460	TONER SHEET
21	38E18371	PAPER GUIDE SHEET
22	64K1330	TRANSFER DRUM LOWER FRAME

* THE GAMMA SENSOR REPAIR KIT INCLUDES A 4 PIN GAMMA SENSOR AND A NEW CONNECTOR BOARD. THE OLD CONNECTOR BOARDS HAVE A 3 PIN CONNECTOR.

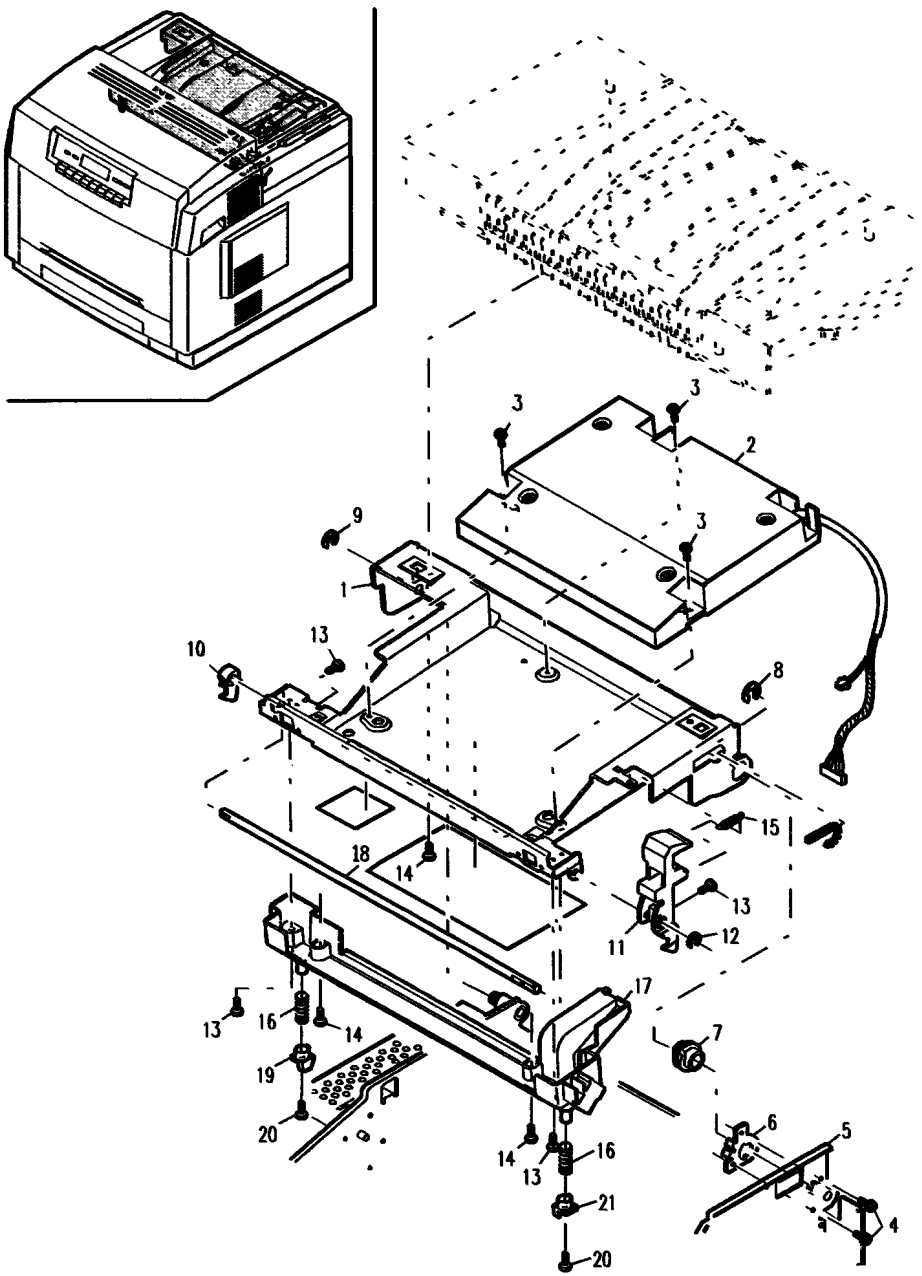
PL 11.1 TRANSFER DRUM ASSEMBLY

1 { 2 - 19
20 { 21 - 23



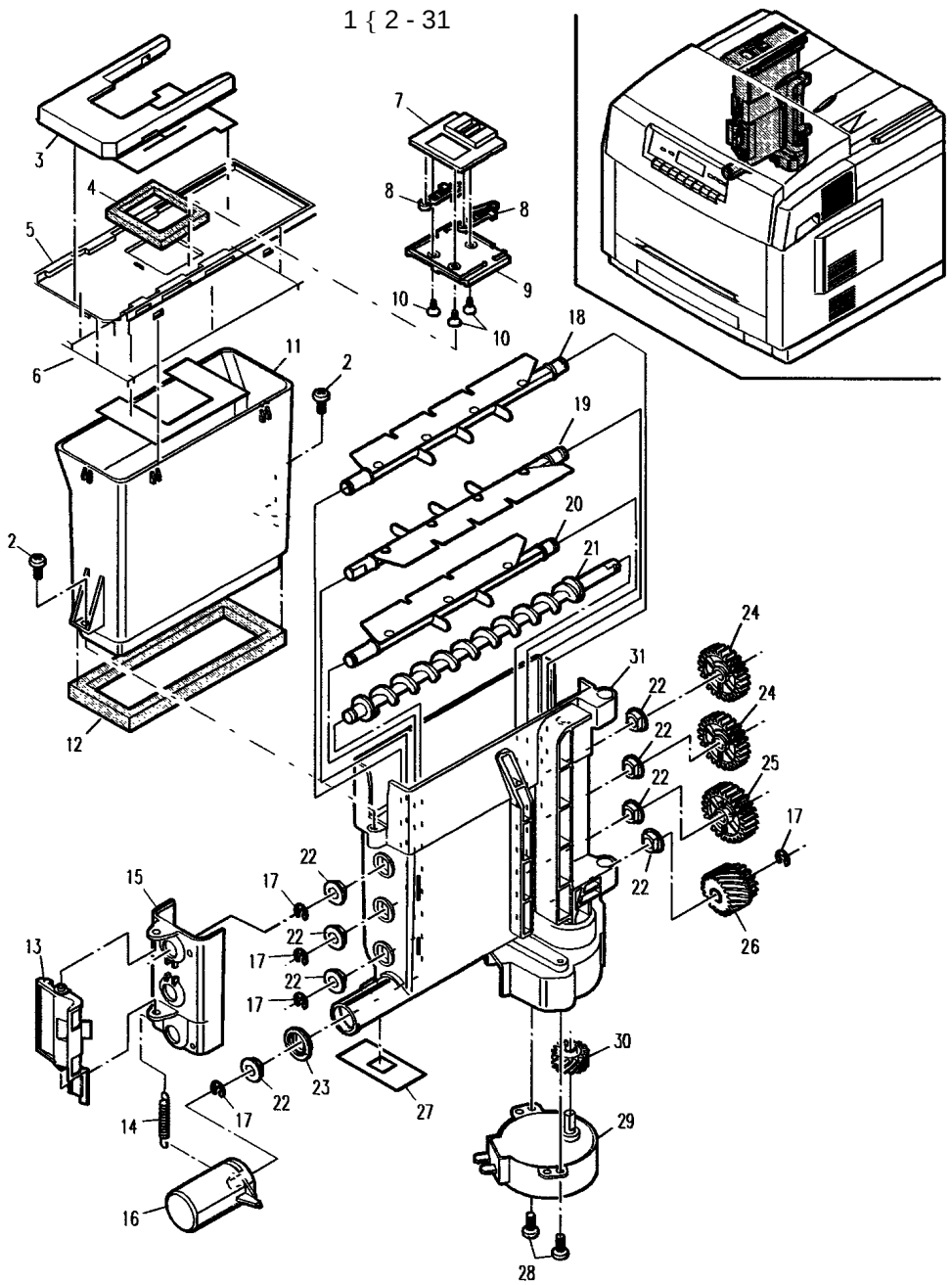
ITEM	PART	DESCRIPTION
1	20K8090	TRANSFER DRUM ASSEMBLY (REP 9.8)
2	(P/O ITEM 1)	RETAINING RING
3	(P/O ITEM 1)	TR DRUM COLLAR
4	(P/O ITEM 1)	WASHER
5	(P/O ITEM 1)	SEAL
6	(P/O ITEM 1)	DRUM
7	(P/O ITEM 1)	BRAKE PLATE
8	(P/O ITEM 1)	SCREW (M4X6)
9	(P/O ITEM 1)	BRAKE PAD
10	(P/O ITEM 1)	SEAL
11	(P/O ITEM 1)	PLATE
12	(P/O ITEM 1)	DISK
13	(P/O ITEM 1)	BRAKE SPRING
14	(P/O ITEM 1)	SCREW (M3X8)
15	(P/O ITEM 1)	OUTER PLATE
16	(P/O ITEM 1)	TR DRUM GEAR
17	(P/O ITEM 1)	SCREW (M4X12)
18	(P/O ITEM 1)	HUB
19	(P/O ITEM 1)	SETSCREW (M4X6)
20	600K71710	NIP WHEEL ADJUSTMENT KIT
21	(P/O ITEM 20)	NIP WHEEL
22	(P/O ITEM 20)	WASHER
23	(P/O ITEM 20)	SCREW

PL 12.1 ROS COMPONENTS



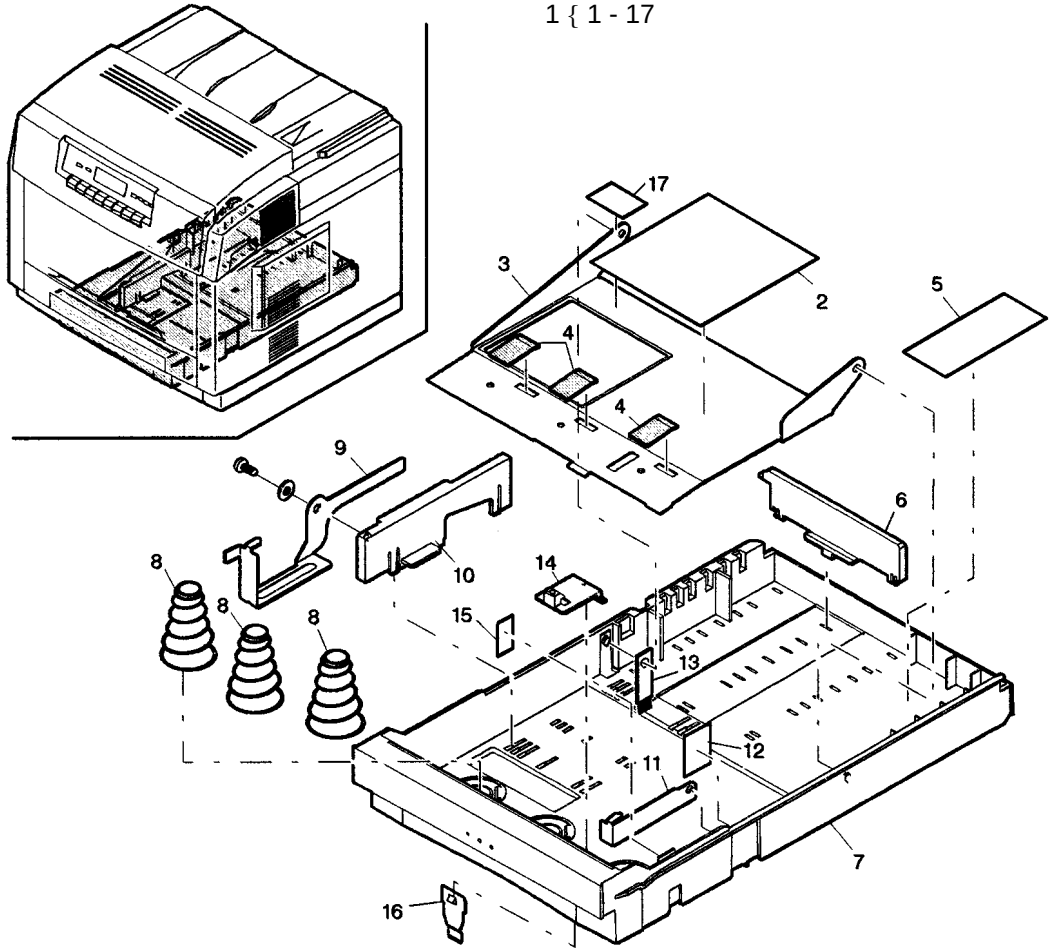
ITEM	PART	DESCRIPTION
1	NOT SPARED	UPPER FRAME
2	122K1760	ROS (REP 12.1)
3	NOT SPARED	SCREW
4	NOT SPARED	SCREW (M4X8)
5	NOT SPARED	RIGHT MAIN FRAME
6	15E64340	SPRING PLATE
7	809E2240	FRAME SPRING
8	NOT SPARED	RETAINING RING (9MM)
9	NOT SPARED	RETAINING RING (7MM)
10	7E48300	ROS LATCH
11	11E7370	RELEASE LEVER
12	NOT SPARED	RETAINING RING (5MM)
13	NOT SPARED	SCREW
14	NOT SPARED	SCREW (M3X8)
15	809E1790	SPRING
16	809E1750	FUSER SPRING
17	48E43570	FRAME COVER
18	6E61620	LOCK SHAFT
19	17E7740	LEFT FUSER STOP
20	NOT SPARED	SCREW (M3X6)
21	17E8370	RIGHT FUSER STOP

PL 13.1 BLACK TONER DISPENSER ASSEMBLY



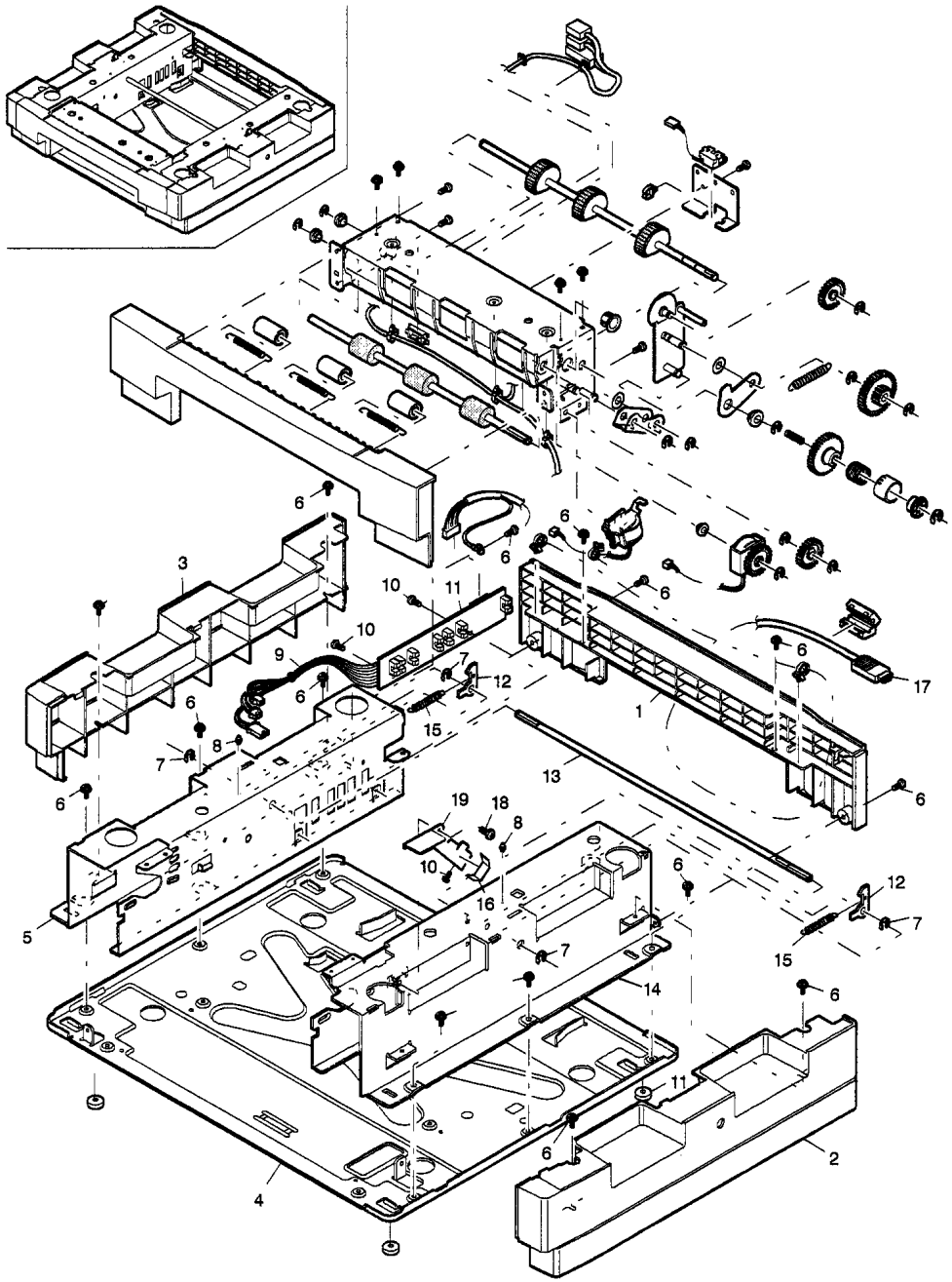
ITEM	PART	DESCRIPTION
1	50K35390	TONER DISPENSER ASSEMBLY
2	(P/O ITEM 1)	SCREW (M3X8)
3	(P/O ITEM 1)	COVER
4	(P/O ITEM 1)	SEAL
5	(P/O ITEM 1)	CARTRIDGE BASE PLATE
6	(P/O ITEM 1)	SEAL
7	(P/O ITEM 1)	COVER
8	(P/O ITEM 1)	COVER LOCK PAWL
9	(P/O ITEM 1)	COVER
10	(P/O ITEM 1)	SCREW (M3X5)
11	(P/O ITEM 1)	HOPPER
12	(P/O ITEM 1)	SEAL
13	11E7400	LOCK LEVER
14	809E1990	SHUTTER SPRING
15	1E43750	LOCK FRAME
16	55E37730	SHUTTER
17	28E12150	RETAINING RING (4MM)
18	(P/O ITEM 1)	PADDLE
19	(P/O ITEM 1)	PADDLE
20	(P/O ITEM 1)	PADDLE
21	(P/O ITEM 1)	AUGER
22	13E12540	BEARING
23	13E12560	BEARING
24	7E48390	UPPER TONER GEAR
25	7E48400	LOWER TONER GEAR
26	7E48410	GEAR
27	35E41680	TONER SEAL
28	(P/O ITEM 1)	SCREW (M3X6)
29	127E10920	TONER MOTOR (BLACK)
30	7E48430	DRIVE GEAR
31	(P/O ITEM 1)	TONER HOPPER

PL 14.1 PAPER CASSETTE COMPONENTS



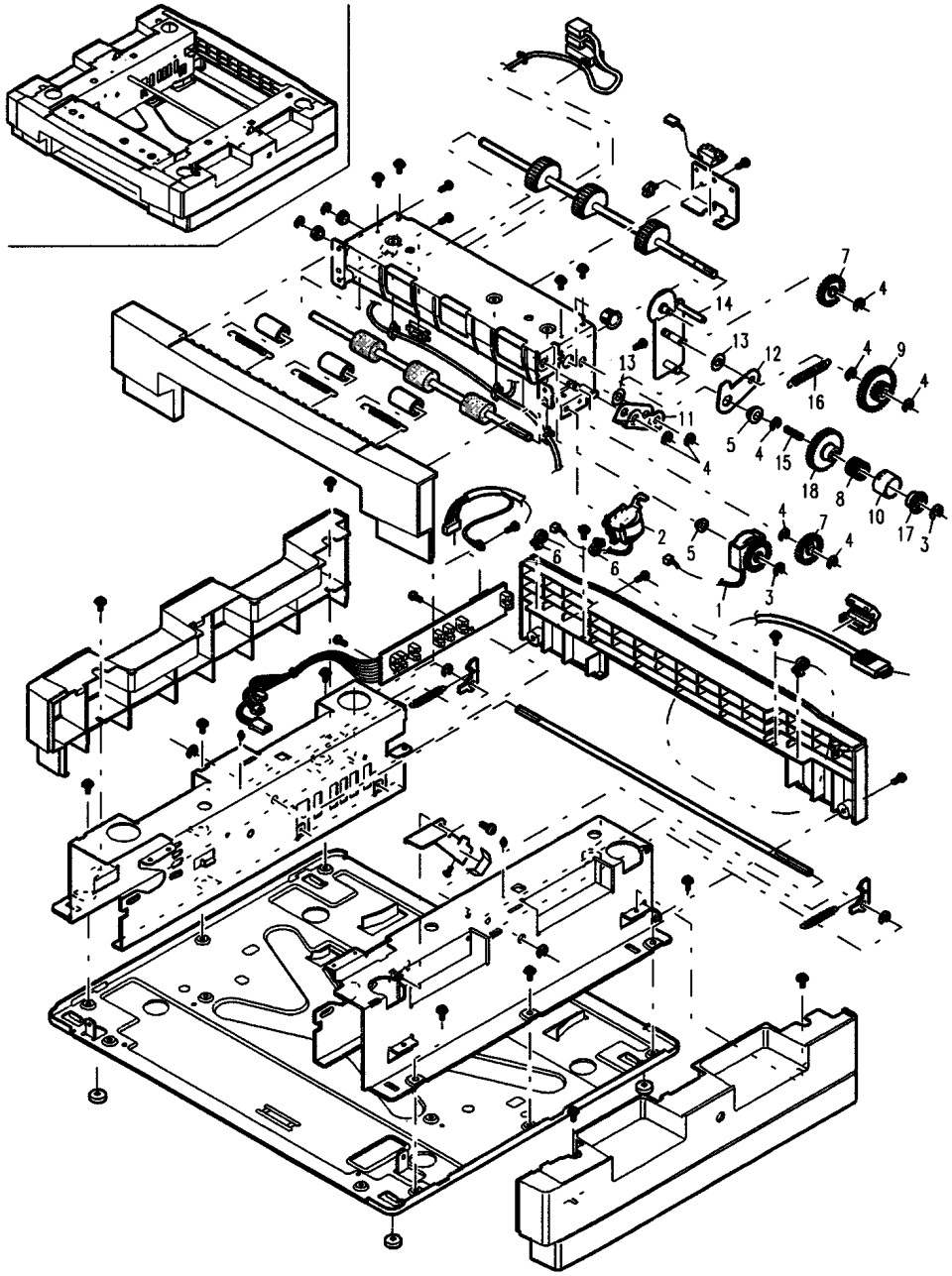
ITEM	PART	DESCRIPTION
1	50K40300	PAPER TRAY ASSEMBLY (ALSO AVAILABLE AS CUSTOMER OPTION 98S3034)
2	NOT SPARED	INSTRUCTION LABEL
3	NOT SPARED	ROTATION PLATE
4	NOT SPARED	RETARD PAD
5	NOT SPARED	SIZE LABEL A
6	NOT SPARED	REAR GUIDE
7	NOT SPARED	CASSETTE CASE
8	NOT SPARED	SPRING
9	NOT SPARED	LEFT SNUBBER
10	NOT SPARED	SIDE GUIDE
11	NOT SPARED	RIGHT SNUBBER
12	NOT SPARED	LABEL
13	NOT SPARED	DISCHARGE BRUSH
14	NOT SPARED	STOPPER
15	NOT SPARED	SIDE PLATE
16	NOT SPARED	ROTATION LOCK SPRING
17	NOT SPARED	SIZE LABEL B

PL 27.1 TRAY 2 COMPONENTS (1 OF 3)



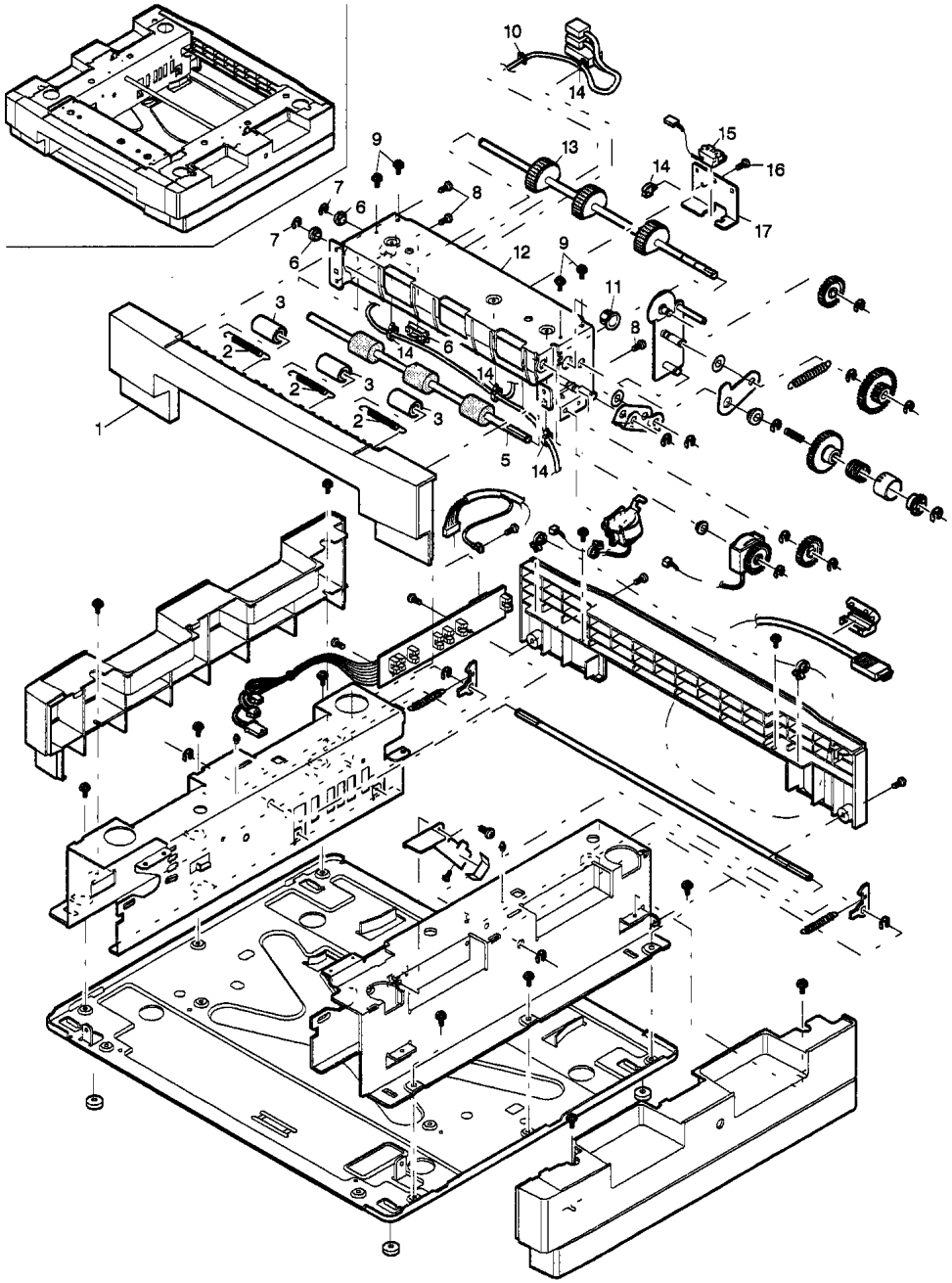
ITEM	PART	DESCRIPTION
1	48E53780	REAR COVER
2	48E53790	RIGHT COVER
3	48E53770	LEFT COVER
4	NOT SPARED	FRAME BASE PLATE
5	NOT SPARED	LEFT FRAME
6	NOT SPARED	SCREW (M4X6)
7	NOT SPARED	E-RING (6MM)
8	NOT SPARED	POSITION PIN
9	162K35720	SENSOR HARNESS
10	NOT SPARED	SCREW (M3X6)
11	160K41070	CASSETTE PWB (REP 27.3)
12	7E51250	LOCK PAWL
13	6E61680	LOCK SHAFT
14	NOT SPARED	RIGHT FRAME
15	80935800	LOCK SPRING
16	809E5810	LEVER SPRING
17	117E18520	INTERFACE CABLE
18	NOT SPARED	SCREW
19	11E7610	JOINT LEVER

PL 27.2 TRAY 2 COMPONENTS (2 OF 3)



ITEM	PART	DESCRIPTION
1	121E14310	DRIVE CLUTCH (REP 27.7)
2	121E14320	FEED SOLENOID (REP 27.5)
3	NOT SPARED	E-RING (4MM)
4	NOT SPARED	E-RING (5MM)
5	NOT SPARED	BEARING
6	NOT SPARED	SNAP BAND
7	7E51260	GEAR (24T)
8	NOT SPARED	SPRING
9	NOT SPARED	GEAR (17/42T)
10	NOT SPARED	FEED SLEEVE
11	12E8450	LOWER DRIVE LINK
12	NOT SPARED	UPPER DRIVE LINK
13	NOT SPARED	WASHER
14	31E8820	DRIVE ARM
15	NOT SPARED	FEED ROLLER SPRING
16	NOT SPARED	LINK SPRING
17	NOT SPARED	CAM CLUTCH BOSS
18	NOT SPARED	GEAR

PL 27.3 TRAY 2 COMPONENTS (3 OF 3)



ITEM	PART	DESCRIPTION
1	48E53670	FRONT COVER
2	809E5790	ROLLER SPRING
3	NOT SPARED	ROLLER
4	NA	
5	22E21900	DRIVE ROLLER
6	13E13430	BEARING
7	NOT SPARED	E-RING (5MM)
8	NOT SPARED	SCREW (M3X16)
9	NOT SPARED	SCREW (M3X6)
10	NOT SPARED	WIRE HOLDER
11	16E13280	CORD BUSHING
12	NOT SPARED	PAPER FEED FRAME
13	22E21010	FEED ROLLER
14	NOT SPARED	SNAP BAND
15	130E8490	TRAY EMPTY SENSOR (REP 27.4)
16	NOT SPARED	SCREW (M4X6)
17	49E84460	DRIVE SENSOR BRACKET

PART NUMBER	PL LOC
101E13090	1.1
101E13680	10.1
101E13700	2.1
101E13720	10.4
105K16390	3.1
105K16400	3.1
105K16410	4.2
105K17050	10.4
110E7550	4.5
110E7560	4.5
110E7570	10.4
110E9930	10.3
115E5410	10.3
115E5830	2.1
115E5840	9.1
115E5850	9.1
115E5860	10.4
115E6900	10.3
116E7350	7.1
116E7360	7.1
116E7370	7.2
116E7380	6.1
116E7390	6.1
116E7400	6.1
117E18520	27.1
118E13750	7.2
118E13760	8.1
118E13770	7.1
118E13780	8.1
11E7360	7.2
11E7370	12.1
11E7380	6.1
11E7390	8.2
11E7400	13.1
11E7610	27.1
120E15800	2.1
120E15810	9.2
120E15820	10.1
121E13350	4.6
121E13360	4.6
121E13370	4.6
121E13380	4.6
121E13390	5.1
121E13400	9.1
121E13410	5.1
121E13420	5.1
121E13430	5.1
121E13440	9.2
121E13450	8.2
121E13460	8.3
121E13470	8.3
121E14310	27.2
121E14320	27.2
121K15660	3.2A
122E2170	10.2
122K1760	12.1
127E10890	4.3
127E10900	4.3
127E10910	9.1
127E10920	13.1
127E10930	10.1
127E10940	4.1
127E10950	4.1
12E8150	9.2
12E8160	10.3
12E8400	6.2
12E8410	7.2
12E8420	7.2
12E8430	4.1
12E8440	4.1
12E8450	27.2
130E7970	9.1
130E7970	10.2
130E7980	2.1
130E8000	8.2
130E8010	10.4
130E8490	27.3
13E12510	5.1
13E12520	2.1
13E12520	9.2
13E12520	9.3
13E12520	9.4
13E12540	13.1
13E12550	5.1
13E12560	13.1
13E12570	8.2
13E12570	8.3
13E12570	10.1
13E12580	10.3
13E12590	9.2
13E13350	4.4
13E13360	9.1
13E13370	8.1
13E13380	6.3
13E13390	4.4
13E13420	10.3
13E13430	27.3
146K560	3.2A
14E32670	10.1
14E34360	10.2
15E59930	6.2
15E59940	7.2
15E59950	10.2
15E59960	9.4
15E59970	9.4
15E64300	9.1
15E64310	6.3
15E64320	4.4
15E64340	12.1
15E64350	7.1
15E64370	2.1
15E64440	10.1
15E64450	10.1
15E64460	10.4
160K27110	3.2A
160K32790	3.1
160K32850	3.1
160K40220	3.2A
160K40550	3.2A
160K40560	3.2A
160K40980	3.2A
160K41070	27.1
160K44790	3.2B
160K49683	3.1
160K50080	4.2
160K54960	3.2B
160K63720	3.1
162E29310	10.2
162K27990	3.2A
162K28000	3.2A
162K28010	3.2A
162K29280	1.1
162K29290	10.2
162K29300	7.1
162K29320	9.1
162K29330	7.1
162K29340	10.4
162K29350	10.4
162K35580	9.1
162K35590	7.1
162K35600	4.3
162K35610	4.5
162K35620	7.2
162K35630	9.1
162K35640	8.3
162K35650	10.2
162K35660	8.3
162K35700	4.6
162K35710	9.1
162K35720	27.1
16E12450	5.1
16E12460	5.1
16E12470	8.2
16E12490	8.3
16E12500	9.4
16E13280	27.3
17E7740	12.1
17E8350	7.2
17E8360	7.1
17E8370	12.1
180K60120	4.2
19E36010	9.3
19E37480	7.2
19K4100	9.3
1E43740	9.1
1E43750	13.1
1E43760	9.2
1E43760	10.1
1E46930	2.1
1E46940	8.1
20E28760	4.3
20E28770	4.5
20E28780	4.4
20E28790	4.4
20K8090	11.1
22E20990	8.1
22E21000	8.2
22E21010	8.2
22E21010	27.3
22E21020	8.2
22E21030	8.1
22E21880	4.1
22E21890	4.1
22E21900	27.3
22K53880	8.1
22K53890	9.1
22K53890	10.1
22K53910	2.1
23E14880	9.1
23E14890	2.1
23E14900	9.1
23E14910	9.1
23E14920	4.5
23E14930	4.5
23E14940	4.4
23E14950	4.4
24E2480	1.1
26E60290	9.4
28E12140	9.1
28E12150	13.1
28E12160	6.3
28E12170	6.3
29E25280	4.4
29E25290	9.4
29E27440	9.3
29E27450	6.2
29E27460	6.2
29E27470	9.2
29E27480	10.3
29E27490	10.4
29E27500	6.2
31E8350	10.2
31E8360	9.2
31E8370	9.2
31E8800	4.1
31E8820	27.2
32E11450	6.2
32E11460	7.1
32E11470	7.1
32E11480	7.2
32E11490	6.1
35E41680	13.1
35E41690	9.4
35E41700	9.4
35E41710	9.4
35E41720	9.4
35E43370	9.4
38E17370	1.1
38E17380	8.1
38E18350	10.4
38E18360	2.1
38E18371	10.4
3E42100	7.1
3E42110	1.1
42E1390	9.4
48E43530	2.1
48E43540	1.1
48E43550	1.1
48E43560	1.1
48E43570	12.1
48E43580	1.1
48E43590	10.2
48E53670	27.3
48E53730	1.1
48E53740	1.1
48E53750	9.4
48E53770	27.1
48E53780	27.1
48E53790	27.1
48K56910	2.1
48K56920	1.1
49E71990	10.2
49E72000	4.5
49E84400	10.2
49E84410	4.1
49E84420	10.1
49E84430	10.4
49E84450	9.1

PART NUMBER	PL LOC
49E84460	27.3
50K35390	13.1
50K40300	14.1
53E5390	10.1
55E37720	10.2
55E37730	13.1
55E37740	9.2
55E37750	8.3
55E38910	2.1
55E38920	10.2
55E38931	8.1
5E12180	8.2
5E12200	6.3
5E12210	6.3
5K4960	9.4
600K65260	8.1
600K65270	10.2
600K65270	10.4
600K71720	9.4
600K75290	9.4
600K75290	11.1
62E8750	10.1
6E58160	2.1
6E61510	8.1
6E61520	4.4
6E61530	8.2
6E61550	9.3
6E61560	5.1
6E61570	5.1
6E61580	5.1
6E61590	5.1
6E61600	6.2
6E61610	6.2
6E61620	12.1
6E61630	10.4
6E61640	5.1
6E61650	5.1
6E61680	27.1
733W3642	3.2A
733W3647	3.2A
733W3660	3.2A
733W3675	3.2A
733W6865	3.2B
733W6866	3.2B
733W6867	3.2B
7E48280	9.1
7E48300	12.1
7E48310	5.1
7E48320	5.1
7E48330	5.1
7E48340	9.1
7E48350	9.1
7E48360	9.1
7E48370	9.1
7E48380	9.1
7E48390	13.1
7E48400	13.1
7E48410	13.1
7E48420	4.3
7E48430	13.1
7E48440	9.2
7E48440	10.3
7E48450	4.5
7E48460	4.5
7E48470	10.4
7E48480	4.4
7E48490	8.3
7E48500	8.2
7E48510	8.2
7E48520	8.3
7E48530	8.2
7E48540	4.6
7E48570	8.3
7E48580	9.4
7E48590	9.4
7E48600	9.4
7E51200	2.1
7E51210	2.1
7E51250	27.1
7E51260	27.2
7E63600	9.2
7E63600	10.3
802E6940	1.1
802E6950	1.1
80935800	27.1
809E1670	6.2
809E1700	4.1
809E1720	8.1
809E1740	5.1
809E1750	12.1
809E1760	8.1
809E1770	5.1
809E1780	2.1
809E1790	12.1
809E1810	6.2
809E1830	10.2
809E1840	6.1
809E1850	10.2
809E1860	8.2
809E1970	7.1
809E1990	13.1
809E2000	8.1
809E2000	10.4
809E2010	10.3
809E2020	9.2
809E2030	6.3
809E2040	9.2
809E2050	8.2
809E2060	9.2
809E2060	10.3
809E2080	8.2
809E2090	4.5
809E2100	9.3
809E2110	4.5
809E2120	8.3
809E2140	8.2
809E2150	8.3
809E2170	4.1
809E2180	9.4
809E2190	9.4
809E2200	9.4
809E2210	9.4
809E2240	12.1
809E5600	6.3
809E5610	6.3
809E5620	7.1
809E5640	8.1
809E5660	2.1
809E5670	2.1
809E5680	9.2
809E5770	9.1
809E5780	10.3
809E5790	27.3
809E5810	27.1
8E5720	5.1
8E5720	8.2
8E5730	6.2
8E5740	8.2
8E5750	6.3
8E5780	9.4
8R7748	8.1
908E1730	7.2

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IOT DIAGNOSTICS

NOTE: The diagnostic operation is the same for both the C55 and NC60 printers, however the keys which are pressed to exercise the diagnostics have different names (same location). The NC60 key number will be enclosed in [ ] and will follow the C55 key names.

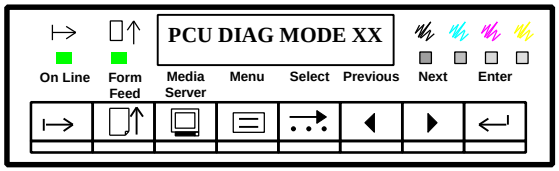
There are two diagnostic modes, the Normal mode and the Special mode.

The **Normal** mode is used to:

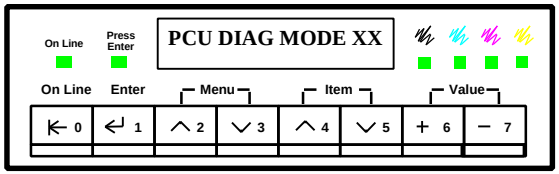
- **Test Input components**
- **Test the Laser components**
- **View the Charge, Transfer, and Bias voltage values**
- **Test the Motors**
- **Test the Clutches**
- **Run the IOT test pattern**
- **Initialize the NVM**
- **Set the consumable counter values**

ENTERING THE NORMAL DIAGNOSTIC MODE:

1. Press the **Menu [3]** and **Enter [7]** keys at the same time, then switch on the Main Power. The C55 Control Panel will indicate the following:



The NC60 Control Panel will indicate the following:



2. The Message Display indicates that you are in the PCU Diagnostic Mode and displays the ROM version number.
3. Press the **Menu [3]** key to step through the diagnostic routines.

EXITING FROM THE NORMAL DIAGNOSTIC MODE:

1. When the PCU DIAG MODE is displayed on the Message Display, press the **Form Feed [1]** key to exit from diagnostics or, switch the printer off wait 10 seconds and then switch the printer on.

SWITCH SCAN

This diagnostic routine is used to check the operation of the input sensors and switches.

1. Enter Normal diagnostics and press the **Menu [3]** key until **SWITCH SCAN 00** is displayed on the Message Display.
2. Press the **Next [6]**/**Previous [5]** keys until the Message Display steps to the SWITCH SCAN which lists the component to be tested.
3. Press the **Form Feed [1]** key to start the test. The SWITCH SCAN number will flash.
4. Operate the component (Figure 6-1). The appropriate LED (K, C, M, Y) should switch on and off.
5. Press **Media Server [2]** to stop the test. Repeat steps 2 through 4 to test additional inputs.

NOTE: When Scan row 04 is selected, the display will also indicate G=XX. This is the Gamma sensor reading and varies from 40 to 100 depending on the condition of the transfer drum. When the white patch is under the sensor, it will read in the 370 range.

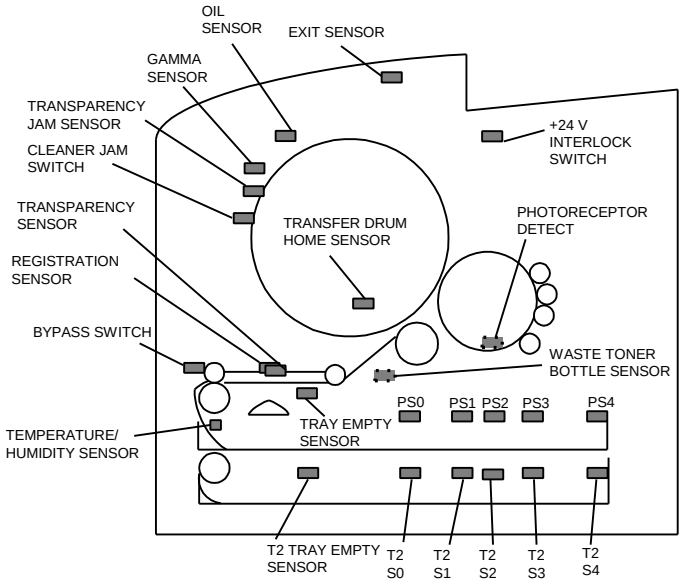


Figure 6-1. Input Component Location

SCAN ROW	LED USED			
	BLACK (K)	CYAN (C)	MAGENTA (M)	YELLOW (Y)
SWITCH SCAN 00	+24 V INTERLOCK SWITCH	BYPASS SWITCH	REGISTRATION SENSOR	EXIT SENSOR
SWITCH SCAN 01	TRAY EMPTY SENSOR	PAPER SIZE 0	PAPER SIZE 1	PAPER SIZE 2
SWITCH SCAN 02	PAPER SIZE 3	PAPER SIZE 4	PHOTORECEPTOR DETECT	WASTE TONER COLLECTOR SENSOR
SWITCH SCAN 03	T2 TRAY EMPTY SENSOR	T2 PAPER SIZE 0	T2 PAPER SIZE 1	T2 PAPER SIZE 2
SWITCH SCAN 04	T2 FEEDER DETECT	TRANSPARENCY SENSOR	TRANSFER DRUM HOME SENSOR	GAMMA SENSOR (Interlock must be closed)
SWITCH SCAN 05	TRANSPARENCY JAM SENSOR	OIL SENSOR	CLEANER JAM SENSOR	

OPTICAL SYS TEST

This Diagnostic routine is used to check the operation of the Raster Output Scanner (ROS).

1. Enter Normal diagnostics and press the **Menu [3]** key until **OPTICAL SYS TEST** is displayed on the Message Display.
2. Press the **Form Feed [1]** key to start the test.
3. The **Form Feed** lamp will flash during the test.
4. The Polygon Motor and the Laser Diode will switched on for 30 seconds. The On Line lamp will come on when the Horizontal Sync signal is generated.
5. To stop the test press the **Media Server [2]** key.

VOL TEST MAIN

This Diagnostic routine is used to check the Charge, Transfer and Developer Bias voltages.

1. Enter Normal diagnostics and press the **Menu [3]** key until **VOL TEST MC** is displayed on the Message Display.
2. Press the **Next [6]**/**Previous [5]** keys until the Message Display steps to the voltage to be tested.
3. Press the **Form Feed [1]** key to start the test. The On Line LED will flash.
4. Use the **Next [6]/Previous [5]** keys to change the voltage value.
5. To stop the test press the **Media Server [2]** key.

Voltage	Default	Range	Comments
MainMC (Charge)	NA	NA	Output fixed (No Display)
TC Bias (Transfer)	1800	1500-3000	One step change = apx. 11 volts
DV BIAS *(Max Bias)	594	298-600	One step change = apx. 20 volts
KD BIAS (Black Bias)	400	298-600	One step change = apx. 20 volts
CD BIAS (Cyan Bias)	400	298-600	One step change = apx. 20 volts
MD BIAS (Magenta Bias)	400	298-600	One step change = apx. 20 volts
YD BIAS (Yellow Bias)	400	298-600	One step change = apx. 20 volts

* This is the bias that is supplied to the roll when the color is not being developed.

MOTOR TEST

This Diagnostic routine is used to test the operation of the motors.

1. Enter Normal diagnostics and press the **Menu [3]** key until **MOTOR TEST** is displayed on the Message Display.
2. Press the **Form Feed [1]** key to start the test.
3. The following motors will operate:
   - **Main Motor**
   - **Paper Feed Motor**
   - **Fuser Motor**
   - **Developer Motor**
   - **Color Toner Motor**
   - **Black Toner Motor (Note 1)**
   - **Polygon Motor**
4. To stop the test press the **Media Server [2]** key.

*NOTE 1: Remove the Rear Cover to view the Black Toner Motor gears. Enter the MOTOR TEST program, then press the **On Line [0]** key to run the motor. Release the **On Line [0]** key to stop the motor Do not run the Black Toner motor for more than 2 seconds or overtoning will occur.*

CLUTCH TEST

This Diagnostic routine is used to test the operation of the clutches and solenoids.

1. Enter Normal diagnostics and press the **Menu [3]** key until **CLUTCH TEST** is displayed on the Message Display.
2. Press the **Form Feed [1]** key to start the test.
3. The following clutches and solenoids will operate:
   - **Transfer Drum Cleaner Solenoid**
   - **Stripper Solenoid**
   - **Developer Roll Cleaning Solenoid**
   - **Registration Clutch**
   - **Grounding Roller Solenoid**
4. Pressing the **On Line [1]** key will energize the Toner Solenoids in sequence. The first time the **On Line** key is pressed energizes the Cyan solenoid, second **On Line** the Magenta solenoid and third **On Line** the Yellow solenoid.
5. To stop the test press the **Media Server [2]** key.

TEST PRINT

This Diagnostic routine is used to print the IOT internal test pattern. Other test patterns which can be printed are stored in the ESS.

1. Enter Normal diagnostics and press the **Menu [3]** key until **TEST PRINT** is displayed on the Message Display.
2. Press the **Form Feed [1]** key to start the test using the default values.
3. During Warm-up and printing the Message Display will indicate:

   P=### **H=**### **T=**###

P, is the print coefficient normally 0 or 1.
H, is the temperature, normally 164 (170°C).
T, is the toner concentration.

The display will indicate KT, CT, MT, YT as the various toner concentrations are checked.

4. To change the default values, press the **Enter [7]** key when **TEST PRINT** is displayed
5. Use the **Menu [3]** key to select the value to be changed (Table 1). Use the **Next [6]/Previous [5]** keys to change the setting.
6. Press the **Media Server [2]** key to return to the **TEST PRINT** display. Press **Form Feed [1]** to make the test print.

Table 1

Values	Default	Settings	Comments
JAM	ON	ON/OFF	Jam detect On/Off
HEATER	ON	ON/OFF	Display heater On/Off
MULTI	OFF	ON/OFF	Multiple copies On/Off
COLOR	ON	ON/OFF	Color print On/Off
TONER	ON	ON/OFF	Display Toner On/Off
CASSETTE	STD	STD/OPT	Feed Standard/ Optional Cassette

*NOTE: When multi is selected hold **Media Server [2]** down until the printer stops.*

NV-RAM INITIAL

This Diagnostic routine is used to initialize the Non-Volatile RAM.

CAUTION

Before initializing the NVM you must obtain the toner concentration setpoints. These setpoints must be reentered after initializing the NVM. Refer to ADJ 3.3.

1. Enter Normal diagnostics and press the **Menu [3]** key until **NV-RAM INITIAL** is displayed on the Message Display.
2. Insert a sheet of paper into the bypass slot to actuate the Bypass Switch, then press the **Form Feed [1]** key. The On Line LED will switch on and then off when the change is stored.
3. The following (Tables 2 through 6) will be initialized.

Table 2

COUNTER SET (Consumable Usage Counters)	
COUNTER SET DRUM	Print Drum Images
COUNTER SET YDEV	Yellow Developer Images
COUNTER SET MDEV	Magenta Developer Images
COUNTER SET CDEV	Cyan Developer Images
COUNTER SET KDEV	Black Developer Images
COUNTER SET PRNT	Total Print Quantity
COUNTER SET FSU	Fuser Usage
COUNTER SET YTON	Yellow Toner Supply time (sec)
COUNTER SET MTON	Magenta Toner Supply time (sec)
COUNTER SET CTON	Cyan Toner On time (sec)
COUNTER SET KTON	Black Toner On time (sec)
COUNTER SET OIL	Oil Usage

(Table 3, 4, 5, and 6 are in Special Diagnostics)

Table 3

COUNTER SET2 (Print/ Error Counters)	
COUNTER SET2 TTL	Total Pages
COUNTER SET2 YPR	Yellow Print Images
COUNTER SET2 MPR	Magenta Print Images
COUNTER SET2 CPR	Cyan Print Images
COUNTER SET2 KPR	Black Print Images
COUNTER SET2 JAM	Jam Counter
COUNTER SET2 OPC	Scan Error Counter
COUNTER SET2 MAM	Main Motor Error Counter
COUNTER SET2 PLM	Polygon Motor Error Counter
COUNTER SET2 HLH	Over Temp Fusing Error Counter
COUNTER SET2 HLL	Under Temp Fusing Error Counter
COUNTER SET2 THO	Thermistor Error Counter
COUNTER SET2 DVM	Developer Motor Error Counter

Table 4

TONER LEVEL (Toner Concentration in developer assembly)	
TONER LEVEL YTON	Y Toner concentration (default 70)
TONER LEVEL MTON	M Toner concentration (default 70)
TONER LEVEL CTON	C Toner concentration (default 70)
TONER LEVEL KTON	K Toner concentration (default 70)

Table 5

ID LEVEL (Density Rate Setpoint)	
ID LEVEL YELLOW	Y Density Rate (default 90)
ID LEVEL MAGENTA	M Density Rate (default 90)
ID LEVEL CYAN	C Density Rate (default 90)
ID LEVEL BLACK	K Density Rate (default 90)

Table 6

TIMEOUT SET (Sets the Power Save and Polygon Motor time out)	
TIMEOUT SET SLP	Sleep (Power Save) (default 30 min.)
TIMEOUT SET PLM	Polygon time out (default 180 sec.)

COUNTER SET

This Diagnostic routine is used to preset the consumable counters to a desired value.

1. Enter Normal diagnostics and press the **Menu [3]** key until **COUNTER SET DRUM** is displayed on the Message Display.
2. Press the **Next [6]**/**Previous [5]** keys until the Message Display steps to the counter to be changed (Table 2).
3. Press the **Enter [7]** key the display will indicate.

   XXXX ########

   XXXX is the consumable name.
   ######## is the current counter value.
4. Press the **Menu [3]** key to select the digit to be changed.
5. Press the **Next [6]**/**Previous [5]** keys to change the counter value.
6. To store the counter change insert a sheet of paper into the bypass slot to actuate the Bypass Switch, then press the **Form Feed [1]** key**.** The On Line LED will switch on and then off when the change is stored.
7. Press the **Media Server [2]** key to return the COUNTER SET list. Repeat steps 2 through 6 to change additional counters.

SPECIAL DIAGNOSTICS

The Special mode is used to:

- **Change the Counter Set2 values**
- **Change the Toner Concentration values**
- **Change the Print Density values**
- **Change the Power Saver values**
- **Test the Operation of the Control Panel keys.**

ENTERING THE SPECIAL DIAGNOSTIC MODE:

1. First, enter the **Normal** Diagnostic mode.
2. While PCU DIAG MODE XX is displayed, press **On Line [0]** then press **Enter [7]**. Release both keys at the same time.
3. The Message Display will indicate:

PCU DIAG SPECIAL

4. Press the **Menu [3]** key to step through the diagnostic routines.

EXITING FROM THE SPECIAL DIAGNOSTIC MODE:

1. When PCU DIAG SPECIAL is displayed on the Message Display, press the **Form Feed [1]** key to exit from Special diagnostics.
2. Press **Form Feed [1]** again to exit from Normal diagnostics.
3. Or, switch the printer off wait 10 seconds and then switch the printer on.

COUNTER SET2

This Diagnostic routine is used to preset the Set2 counters to a desired value.

1. Enter Special diagnostics and press the **Menu [3]** key until **COUNTER SET2 TTL** is displayed on the Message Display.
2. Press the **Next [6]/Previous [5]** keys until the Message Display steps to the counter to be changed (Table 3).
3. Press the **Enter [7]** key the display will indicate:

XXXX ########

   XXXX is the counter name.
   ######## is the current counter value.
4. Press the **Menu [3]** key to select the digit to be changed.
5. Press the **Next [6]/Previous [5]** keys to change the counter value.
6. To store the counter change insert a sheet of paper into the bypass slot to actuate the Bypass Switch, then press the **Form Feed [1]** key**.** The On Line LED will switch on and then off when the change is stored.
7. Press the **Media Server [2]** key to return the COUNTER SET2 list. Repeat steps 2 through 6 to change additional counters.

TONER LEVEL

This Diagnostic routine is used to set the toner concentration setpoints in the developer assembly.

1. Enter Special diagnostics and press the **Menu [3]** key until TONER LEVEL YTON is displayed on the Message Display.
2. Press the **Next [6]/Previous [5]** keys until the Message Display steps to the color to be changed (Table 4).
3. Press the **Enter [7]** key the display will indicate:

XXXX ###

   XXXX is the color.
   ### is the current toner concentration setpoint.
4. Press the **Next [6]/Previous [5]** keys to change the setpoint.
5. To store the change insert a sheet of paper into the bypass slot to actuate the Bypass Switch, then press the **Form Feed [1]** key**.** The On Line LED will switch on and then off when the change is stored.
6. Press the **Media Server [2]** key to return the TONER LEVEL list. Repeat steps 2 through 5 to change other setpoints.

ID LEVEL

This Diagnostic routine is used to set the image density.

1. Enter Special diagnostics and press the **Menu [3]** key until **ID LEVEL YELLOW** is displayed on the Message Display.
2. Press the **Next [6]**/**Previous [5]** keys until the Message Display steps to the color density to be changed (Table 5).
3. Press the **Enter [7]** key the display will indicate:

   XXXX ###

   XXXX is the color name.
   ### is the current density value.
4. Press the **Next [6]**/**Previous [5]** keys to change the density value.
5. To store the density change insert a sheet of paper into the bypass slot to actuate the Bypass Switch, then press the **Form Feed [1]** key**.** The On Line LED will switch on and then off when the change is stored.
6. stored.
7. Press the **Media Server [2]** key to return the ID LEVEL list. Repeat steps 2 through 5 to change additional densities.

NOTE: This value is changed when setting the color density and color balance.

TIMEOUT SET

This Diagnostic routine is used to set when the printer enters the Power Saver (Sleep) mode. It is also used to set when the Polygon motor shuts off.

1. Enter Special diagnostics and press the **Menu [3]** key until **TIMEOUT SET SLP** is displayed on the Message Display.
2. Press the **Next [6]**/**Previous [5]** keys until the Message Display steps to the timeout to be changed (Table 6).
3. Press the **Enter [7]** key the display will indicate:

   XXX ###

   XXX is the timeout feature to be changed.
   ### is the current timeout value.
4. Press the **Next [6]**/**Previous [5]** keys to change the timeout value.
5. To store the change insert a sheet of paper into the bypass slot to actuate the Bypass Switch, then press the **Form Feed [1]** key**.** The On Line LED will switch on and then off when the change is stored.
6. Press the **Media Server [2]** key to return to the TIMEOUT SET list. Repeat steps 2 through 5 to change the other timeout value.

PANEL KEY TEST

This Diagnostic routine is check the operation of the switches on the control panel.

1. Enter Special diagnostics and press the **Menu [3]** key until **PANEL KEY TEST** is displayed on the Message Display.
2. Actuate the Bypass Switch, then press the **Form Feed [1]** key. The display will indicate:

   1?2?3?4?5?6?7?8?

3. Refer to Table 7 for the number assigned to the key. When the key is pressed, the ? will change to a ¬ .

Table 7

Key	Number	Key	Number
On Line [0]	1	Select [4]	5
Form Feed [1]	2	Previous [5]	6
Media Server [2]	3	Next [6]	7
Menu [3]	4	Enter [7]	8

4. If all keys check OK, the display will indicate:

   1←2←3←4←5←6←7←8←

5. Once all keys are checked the display will show the DATE and then return to PANEL KEY TEST.

COUNTER LIMIT

This Diagnostic routine is used to change the limits for the consumables.

1. Enter Special diagnostics and press the **Menu [3]** key until **COUNTER LIM DRUM** is displayed on the Message Display.
2. Press the **Next [6]/Previous [5]** keys until the Message Display steps to the consumable limit to be changed (Table 8).
3. Press the **Enter [7]** key the display will indicate.

   XXXX ########

   XXXX is the consumable name.
   ######## is the current limit.
4. Press the **Menu [3]** key to select the digit to be changed.
5. Press the **Next [6]/Previous [5]** keys to change the limit.
6. To store the counter change insert a sheet of paper into the bypass slot to actuate the Bypass Switch, then press the **Form Feed [1]** key**.** The On Line LED will switch on and then off when the change is stored.
7. Press the **Media Server [2]** key to return the COUNTER LIMIT list. Repeat steps 2 through 6 to change additional counters.

Table 8 Consumable Defaults

Consumable	Default Value
(DRUM) Drum	50,000
(YDEV) Y Developer	30,000
(MDEV) M Developer	30,000
(CDEV) C Developer	30,000
KDEV) K Developer	50,000
(PRNT) Prints	300,000
(FSU) Fuser	60,000
(YTON) Yellow Toner	99999999
(MTON) Magenta Toner	99999999
(CTON) Cyan Toner	99999999
(KTON) Black Toner	99999999
(OIL) Oil	50
(DRMN) Drum Notify	45,000
(YDVN) Y Developer Notify	27,000
(MDVN) M Developer Notify	27,000
(CDVN) C Developer Notify	27,000
(KDVN) K Developer Notify	45,000

BACKGROUND DIAGNOSTICS

The Background diagnostic mode is used during manufacturing to set the basic printer parameters and should rarely require adjustment in the field.

The Background Diagnostic Mode is used to :

Initialize the following:

- Gamma Sensor A (adjust)
- Gamma Sensor I (calibration)
- Gamma Sensor C (correction)
- Black Developer (Detect K TC)
- Color Developer (Detect C,M,Y, TC)
- Both Developers (Detect K,C,M,Y, TC)
- Drum
- Fuser

Set the Control Values for the following:

- Plain Paper Transfer Current
- Transparency Transfer Current
- Gamma Transfer Current
- K Developer Bias
- C Developer Bias
- M Developer Bias
- Y Developer Bias
- Process Control (Off, On)
- Fuser Motor Speed (GP 3.4)
- Paper Feed Motor Speed

Check and set the fuser temperature.

ENTERING THE BACKGROUND DIAGNOSTIC MODE:

1. Enter Normal Diagnostics. (**Menu [3]**, **Enter [7]** + Power on).
2. Enter Special Diagnostics (while PCU DIAG MODE XX is displayed, press **On-Line [0]** then press **Enter [7]**. Release both keys at the same time).
3. Enter Background Diagnostics (while PCU DIAG MODE SPECIAL is displayed, press **Media Server [2]** then press **Previous [5]**. Release both keys at the same time).
4. The Message Display will indicate:

DIAG BACK GROUND

5. Press the **Menu [3]** key to step through the diagnostic routines.

EXITING FROM THE BACKGROUND DIAGNOSTIC MODE:

1. When DIAG BACK GROUND is displayed on the Message Display, press the **Form Feed [1]** key to exit from Background diagnostics to Normal diagnostics.
2. Press **Form Feed [1]** again to exit from Normal Diagnostics.
3. Or, switch the power off wait 10 seconds and then switch the power on.

INITIAL

This Diagnostic routine is used to initialize the following printer parameters:

- Gamma Sensor A (adjust density)
- Gamma Sensor I (calibrate sensor)
- Gamma Sensor C (calculate sensor correction)
- Black Developer (set current black TC as Black toner setpoint)
- Color Developer (set current color TC as Color toner setpoint)
- Both Developers (set current TC as toner setpoint for all four colors)
- Drum (reset drum counter)
- Fuser (reset fuser counter)

1. Enter Background diagnostics and press the **Menu [3]** key until **INITIAL GAMMA_A** is displayed on the Message Display.
2. Use the **Previous [5]/Next [6]** keys to select the parameter to be initialized.
3. To initialize the item Insert a sheet of paper into the bypass slot to actuate the Bypass Switch, then press the **Form Feed [1]** key. The On Line LED will switch on and then off when the change is stored.
4. When the initialization routine is compete press **Previous [5]/Next [6]** key to select the next parameter to be initialized.

CONTROL

This Diagnostic routine is used to set the control points for the following printer parameters:

- K Developer Bias
- C Developer Bias
- M Developer Bias
- Y Developer Bias
- GAMMA MD (Process Control, Off, On).
- CONTROL PATCH MD (C55/C55mp IOT Software Version 75 and up). Refer to GP 3.2.
- TONER MD (IOT Software Version 94 and up). Switches new Toner Control program off and on. Should be left on.
- SLPGM MD (IOT Software Version 94 and up). (Perform copy quality setup when waking up from power save, Off, On).
- BLKHI MD (IOT Software Version 94 and up). (Fast Black Off and On)
- CL COUNT MD (stores cleaning cycle count).
- Fuser Motor Speed (↑ value to ↓ speed)
- Paper Feed Motor Speed (↑ value to ↓ speed)

1. Enter Background diagnostics and press the **Menu [3]** key until **CONTROL KDVBIAS** is displayed on the Message Display.
2. Use the **Previous [5]**/**Next [6]** keys to select the parameter to be changed).
3. Press the **Enter [7]** key the display will indicate the present value.
4. Press **Previous [5]**/**Next [6]** to change the value.
5. To store the change insert a sheet of paper into the bypass slot to actuate the Bypass Switch, then press the **Form Feed [1]** key. The On Line LED will switch on and then off when the change is stored.

Table 9 Control Defaults

Item	Default	Description
C55/C55mp/[NC60]		
Control K DVBias	400	K Dev Bias
Control CL Count	20	Cleaning Cycle Count
Control Gamma MD	On	Process Control, On/Off
Control Y DVBias	400	Y Dev Bias
Control M DVBias	400	M Dev Bias
Control C DVBias	400	C Dev Bias
(C55/C55mp)		
Control Patch MD	On	Patch Control, On/Off
Control PF Motor	3409	Paper Feed Mot. Speed
Control FS Motor	3729	Fuser Motor Speed
[NC60]		
Control PF Motor	3221	Paper Feed Mot. Speed
Control FS Motor	3527	Fuser Motor Speed
Control Patch MD	Off	Patch Control, On/Off
Control BLKHI MD	On	Fast Black, On/Off
Control SLPGM MD	Off	Process Control after Power Save On/Off
Control Toner MD	On	ContinousToner, On/Off

HEATER TEST

This Diagnostic routine is used to check and change the fuser temperature control points

During the heater test the following data is displayed.

***** Fuser On

H Thermistor Output

C Temperature level being monitored.

The fuser has five different paper setpoints, (Plain C0 through Plain C4) and five different transparency setpoints, (OHP C0 through OHP C4). The setpoint selected depends on the mode of operation.

1. Enter Background diagnostics and press the **Menu [3]** key until **HEATER TEST** is displayed on the Message Display.
2. Testing the heater.
3. With **HEATER TEST** displayed press the **Form Feed [1]** Key.
   a. The printer will begin to warm up and display the fuser values.
   b. Use the **Next [6]**/**Previous [5]** keys to toggle between the paper and transparency values.
   c. Press **Media Server [2]** to exit from the Heater test.
4. Changing the temperature values.
   a. With **HEATER TEST** displayed press the **Enter [7]** Key
   b. Use the **Menu [3]** key to select the value to be changed.
   c. Use the **Next [6]**/**Previous [5]** keys to change the value.
   d. To store the change insert a sheet of paper into the bypass slot to actuate the Bypass Switch, then press the **Form Feed [1]** key. The On Line LED will switch on and then off when the change is stored.
   e. Press **Media Server [2]** to exit from the Temperature Change.

Table 10 Fuser Defaults

Item	Default	Description
(C55/C55mp)		
Plain C0:	102	Paper intermediate setpoint
Plain C1:	102	Paper intermediate setpoint
Plain C2:	119	Paper intermediate setpoint
Plain C3:	129	Paper intermediate setpoint
Plain C4:	140	Paper control setpoint
[NC60]		
Plain C0:	107	Paper intermediate setpoint
Plain C1:	107	Paper intermediate setpoint
Plain C2:	124	Paper intermediate setpoint
Plain C3:	134	Paper intermediate setpoint
Plain C4:	145	Paper control setpoint
C55/C55mp/[NC60]		
OHP C0:	20	Transparency intermediate setpoint
OHP C1:	20	Transparency intermediate setpoint
OHP C2:	20	Transparency intermediate setpoint
OHP C3:	146	Transparency intermediate setpoint
OHP C4:	160	Transparency control setpoint
W/U C0:	112	Warmup intermediate setpoint
W/U C1:	112	Warmup intermediate setpoint
W/U C2:	129	Warmup intermediate setpoint
W/U C3:	139	Warmup intermediate setpoint
W/U C4:	150	Warmup control setpoint

TC BIAS

This Diagnostic routine is used to set the low normal and high Transfer Bias for the following:

- Plain (ordinary paper)
- OHP (transparencies)
- Gamma (patch bias)

1. Enter Background diagnostics and press the **Menu [3]** key until **TC BIAS PLAIN CL** is displayed on the Message Display.
2. Use the **Previous [5]/Next [6]** keys to select the bias and range to be changed).
3. Press the **Enter [7]** key the display will indicate the present value.
4. Press **Previous [5]/Next [6]** to change the value.
5. To store the change insert a sheet of paper into the bypass slot to actuate the Bypass Switch, then press the **Form Feed [1]** key. The On Line LED will switch on and then off when the change is stored.

Table 11 Transfer Defaults

Item	Default	Description
C55/C55mp/[NC60]		
TC Bias Gamma KH	505	K high humidity patch bias
TC Bias Gamma KN	800	K norm humidity patch bias
TC Bias Gamma KL	800	K low humidity patch bias
TC Bias Gamma CH	505	C high humidity patch bias
TC Bias Gamma CN	800	C norm humidity patch bias
TC Bias Gamma CL	800	C low humidity patch bias
TC Bias OHP.BS/H	2200	TX high humidity bias
TC Bias OHP.BS/N	2200	TX norm. humidity bias
TC Bias OHP.BS/L	2200	TX low humidity bias
TC Bias OHP.DT/H	200	TX high humidity bias offset
TC Bias OHP.DT/N	200	TX norm. humidity bias offset
TC Bias OHP.DT/L	105	TX low humidity bias offset
(C55/C55mp)		
TC Bias P.P.BS/H	1200	Paper high humidity bias
TC Bias P.P.BS/N	1305	Paper norm. humidity bias
TC Bias P.P.BS/L	1400	Paper low humidity bias
TC Bias P.P.DT/H	0	Paper high humidity bias offset
TC Bias P.P.DT/N	0	Paper norm. humidity bias offset
TC Bias P.P.DT/L	0	Paper low humidity bias offset
[NC60]		
TC Bias P.P.BS/H	1000	Paper high humidity bias
TC Bias P.P.BS/N	1000	Paper norm. humidity bias
TC Bias P.P.BS/L	1200	Paper low humidity bias
TC Bias P.P.DT/H	105	Paper high humidity bias offset
TC Bias P.P.DT/N	105	Paper norm. humidity bias offset
TC Bias P.P.DT/L	105	Paper low humidity bias offset

The NC60 default values listed above will be the IOT version 94 defaults. Earlier NC60 IOT versions should be set to the above values.

TS LIFE

This Diagnostic routine is used to set the toner concentration offset. This offset is used to compensate for developer aging.

1. Enter Background diagnostics and press the **Menu [3]** key until **TS LIFE C** is displayed on the Message Display.
2. Use the **Previous [5]/Next [6]** keys to select the color and range to be changed).
3. Press the **Enter [7]** key the display will indicate the present value.
4. Press **Previous [5]/Next [6]** to change the value.
5. To store the change insert a sheet of paper into the bypass slot to actuate the Bypass Switch, then press the **Form Feed [1]** key. The On Line LED will switch on and then off when the change is stored.

Table 12 Toner Supply Defaults

Item	Default	Description
C55/C55mp/[NC60]		
TS Life K35k→	0	TC offset black.>35k
TS Life K10k→35k	0	TC offset black 10→35k
TS Life K.2k→10k	0	TC offset black .2→10k
TS Life K. 0k→.2k	4	TC offset black . 0→.2k
TS Life C35k→	0	TC offset color.>35k
TS Life C10k→35k	0	TC offset color 10→35k
TS Life C.2k→10k	0	TC offset color .2→10k
TS Life C 0k→.2k	0	TC offset color. 0→2k
[NC60]		
TS Life TS Delta	3	Delta for toner override

OFF LINE MENUS (C55/C55MP ONLY)

PROCEDURE

NOTE: Before entering the Off Line Menus, ensure that the printer has completed the initialization cycle and the On Line LED is on.

Press the **On Line** key. The green On Line LED will go out indicating that you are in the Off Line mode. Press the **Menu** key. You are now in the Off Line menus

Navigating through the Menus.

Enter ---------- selects an item or enters a sub-menu.

Next ---------- moves forward in the sub-menus.

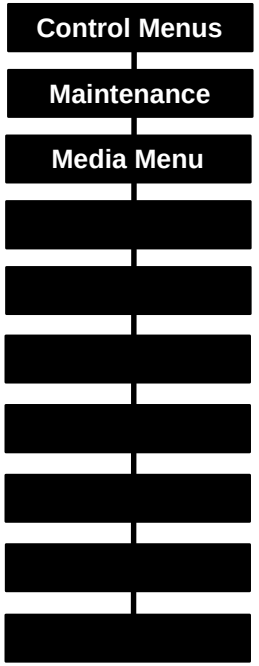
Previous --------- moves back in the sub-menus.

Media Server --- moves to the Media server menu.

Menu ---------- moves to the top of the menu list.

The Media Server can be selected from the On Line mode by pressing **Media Server**.

The printer menus are in layers. The TOP MENU is Layer 0 and consists of the following:



The only menu which will described in detail here is the C55/C55mp Service Menu. To see how the rest of the Menus are layered refer to the C55/C55mp Menu page.
To run the MENU page:

Press	Display Reads
On Line	< OFF LINE >
Menu	< CONTROL >
Next - until	< PRINT >
Enter	< STARTUP >
Next - until	< MENU >
Enter	< YES >
Enter	< PROCESSING >

(C55/C55mp Only)

TOP MENU
<SERVICE>

Layer 1	Layer 2	Layer 3	Layer 4
SERVICE <TEST PATTERNS>	TEST PATTERNS <PRINT PQ SET>	PRINT PQ SET <**YES**> <NO> <EXIT THIS MENU>	
	TEST PATTERNS <PATTERN TYPE	PATTERN TYPE <PCL>	PCL <**TEST PATTERN A**> <100% STRIPE> <COLOR BALANCE> <YELLOW STEP> <MAGENTA STEP> <CYAN STEP> <BLACK STEP> <BLANK> <GRAY HALFTONE> <EXIT THIS MENU>
		PATTERN TYPE <POSTSCRIPT>	POSTSCRIPT <**TEST PATTERN A**> <COLOR BALANCE> <EXIT THIS MENU>
		PATTERN TYPE <IOT STRIPE>	PATTERN TYPE < QUANTITY > NUMBER OF COPIES <**1**~99>
			PATTERN TYPE <TRAY> (Must have Tray 2 Installed) TRAY <**TRAY 1**> <TRAY 2> <EXIT THIS MENU>
			PATTERN TYPE <RUN TEST JOB> <**YES**> <NO>

(C55/C55mp Only)

TOP MENU
<SERVICE>

(Continued)

Layer 1	Layer 2	Layer 3	Layer 4
		PATTERN TYPE <EXIT THIS MENU>	
SERVICE <TEST PATTERNS> (continued)	TEST PATTERNS <DIAGNOSTICS>	DIAGNOSTICS <**YES**> <NO> <EXIT THIS MENU>	
	TEST PATTERNS <EXIT THIS MENU>		
SERVICE <LOSSY COUNTER>	LOSSY COUNTER <BINARY>	BINARY #	
	LOSSY COUNTER <CONTONE>	CONT. TONE #	
	LOSSY COUNTER <EXIT THIS MENU>		
SERVICE <SHOW SW LEVEL>	<SOFTWARE DATA>		
SERVICE <SHOW MEMORY>	SHOW MEMORY ## MB		
SERVICE <ERROR LOGS>	ERROR LOGS <ACTIVE FAULTS>	ACTIVE FAULTS < XXX XXX>	
	ERROR LOGS <FAULT HISTORY>	##FAULTS IN LOG PRESS ENTER	LIST OF LAST 50 FAULTS
	ERROR LOGS <EXIT THIS MENU>		
SERVICE <ADJUSTMENTS>	ADJUSTMENTS <LEFT MARGIN>	LEFT MARGIN <# mm>	
	ADJUSTMENTS <TOP MARGIN>	TOP MARGIN <# mm>	

(C55/C55mp Only)

TOP MENU <SERVICE>

(Continued)

Layer 1	Layer 2	Layer 3	LAYER 4
SERVICE <ADJUSTMENTS	ADJUSTMENTS <CLEANING CYCLE>	CLEANING CYCLE <NEVER> <10 IMAGES> <20 IMAGES> <30 IMAGES> <40 IMAGES> <50 IMAGES> <60 IMAGES> <70 IMAGES> <80 IMAGES> <90 IMAGES> <100 IMAGES>	
	ADJUSTMENTS <PATCH CONTROL>	PATCH CONTROL <ON> <OFF>	
	ADJUSTMENTS <EXIT THIS MENU>		
SERVICE <RESET CRU>	RESET CRU <RESET K DEV>	RESET K DEV <YES> <**NO**>	
	RESET CRU <RESET CMY DEV>	RESET CMY DEV <YES> <**NO**>	
	RESET CRU <RESET PRINTDRU>	RESET PRINTDRU <YES> <**NO**>	
	RESET CRU <RESET FUSER>	RESET FUSER <YES> <**NO**>	
	RESET CRU <EXIT THIS MENU>		

(C55/C55mp Only)

TOP MENU <SERVICE>

(Continued)

Layer 1	Layer 2	Layer 3	LAYER 4
SERVICE <SHOW SETPOINTS>	SHOW SETPOINTS <BLACK TC>	BLACK TC KKK	
	SHOW SETPOINTS <CYAN TC>	CYAN TC CCC	
	SHOW SETPOINTS <MAGENTA TC>	MAGENTA TC MMM	
	SHOW SETPOINTS <YELLOW TC>	YELLOW TC YYY	
	SHOW SETPOINTS <EXIT THIS MENU>		
SERVICE < DISK SERVICES >	DISK SERVICES <FORMAT DISK>	FORMAT DISK <ARE YOU SURE> YES **NO**	
	DISK SERVICES <EXIT THIS MENU>		
SERVICE <EXIT THIS MENU>			

Notes:

MENUS [NC60 ONLY]

PROCEDURE

NOTE: Before entering the NC60 Menus, ensure that the printer has completed the initialization cycle and the On Line LED is on.

Press the **MENU UP or MENU DOWN** key. You are now in the menus

Navigating through the Menus.

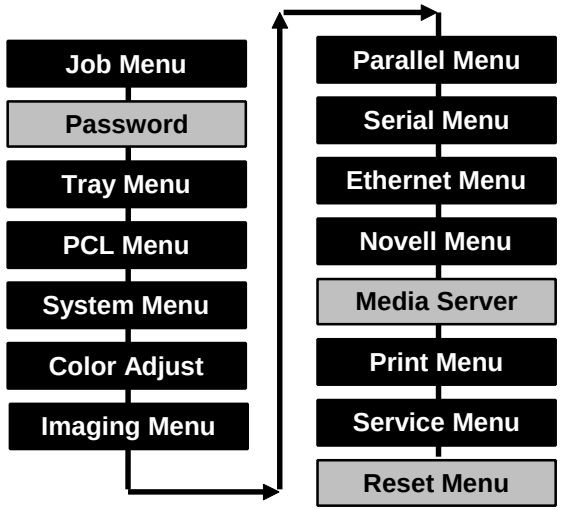
Menu up or Menu Down
Scrolls through the Menus.

Item Up or Item Down
Enters the Menu display and scrolls through the sub menus.

Value Up or Value Down
Selects values within the submenu.

Enter
Stores selected values or performs the selected function.

The printer menus are in layers. The TOP MENU layer consists of the following:



NOTE: The Password option is used to send a print and hold it until you are at the printer to receive it. This option is only available if the printer has a hard drive.

NOTE: The Media Server option is only available if the printer has the Media Server Option and a floppy disk is inserted.

*NOTE: The Reset Menu is only visible if the **On Line** and **Enter** keys are pressed and held at power on. The keys must be held until the display indicates Power On Version X.XX, then release the keys.*

To see how the Menus are layered refer to the NC60 Menu page.
To run the NC60 MENU page:

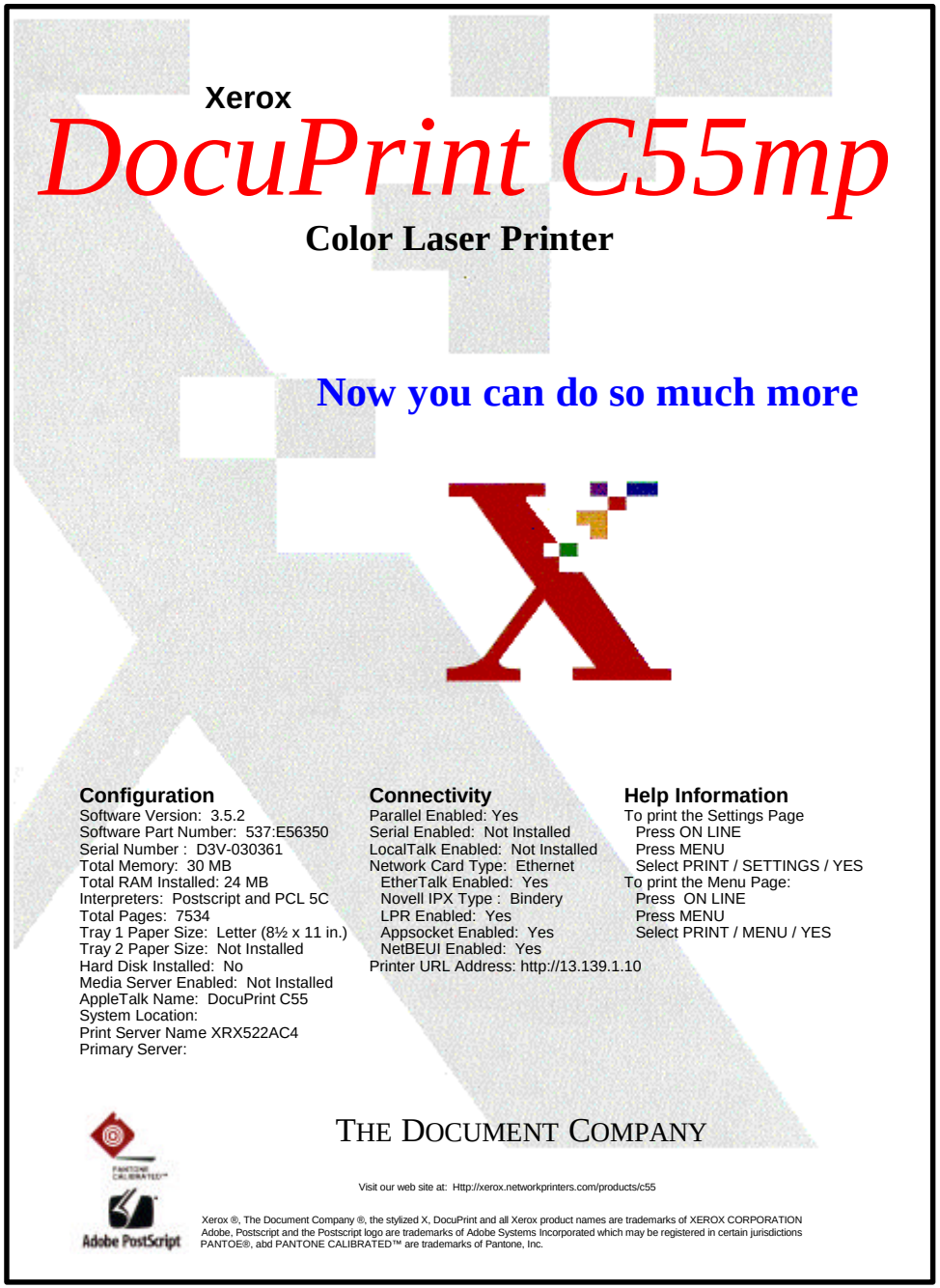
Press	Display Reads
Menu Up - until	Menus Print
Item Down - until	Print Menu Map
Enter	Processing . . . Menu Map

ESS TEST PATTERNS AND INFORMATION PAGES

STARTUP (C55/C55mp)

Press	Display Reads
On Line	< OFF LINE >
Menu	< CONTROL >
Next - until	< PRINT >
Enter	< STARTUP >
Enter	< YES >
Enter	< PROCESSING >

This is the startup page. It can be set to print automatically once the printer has finished the warm-up cycle. This page displays Configuration data, Connective data, and a brief Help.


Xerox
DocuPrint C55mp
Color Laser Printer
Now you can do so much more
Configuration
Software Version: 3.5.2
Software Part Number: 537:E56350
Serial Number : D3V-030361
Total Memory: 30 MB
Total RAM Installed: 24 MB
Interpreters: Postscript and PCL 5C
Total Pages: 7534
Tray 1 Paper Size: Letter (8½ x 11 in.)
Tray 2 Paper Size: Not Installed
Hard Disk Installed: No
Media Server Enabled: Not Installed
AppleTalk Name: DocuPrint C55
System Location:
Print Server Name XRX522AC4
Primary Server:
Connectivity
Parallel Enabled: Yes
Serial Enabled: Not Installed
LocalTalk Enabled: Not Installed
Network Card Type: Ethernet
EtherTalk Enabled: Yes
Novell IPX Type : Bindery
LPR Enabled: Yes
Appsocket Enabled: Yes
NetBEUI Enabled: Yes
Printer URL Address: http://13.139.1.10
Help Information
To print the Settings Page
Press ON LINE
Press MENU
Select PRINT / SETTINGS / YES
To print the Menu Page:
Press ON LINE
Press MENU
Select PRINT / MENU / YES
Adobe PostScript
THE DOCUMENT COMPANY
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STARTUP [NC60]

Press	Display Reads
Menu Up - until	Menus Print Menu
Item Up - until	Print Startup Page
Enter	Processing . . .

This is the startup page. It can be set to print automatically once the printer has finished the warm-up cycle. This page displays Configuration data, Connective data, and a brief Help.


DocuPrint NC60
Network Color Laser Printer
From a different line of thinking, the new pace of printing.
Configuration
Serial Number:
Software Version: 1.80-47
Engine Software Version: 94
Total Memory: 64MB
Total RAM Installed: 48MB
Interpreters: Postscript Level 3 and PCL 5C
Total Pages: 832
Tray I Paper Size: Letter (8½ x 11 in.)
Tray 2 Paper Size: Not Installed
Hard Disk Installed: Yes
Media Server: Yes
System Location:
Print Server Name: XRX-0000AA790054
Primary Server:
Printer URL Address: http://xerox.networkprinters.com/products/NC60
Connectivity
Parallel: Yes
Serial: Yes
NetworkCardType: Ethemet-10
EtherTalk Enabled: Yes
Novell IPX Type: NDS/BEM
LPR Enabled: Yes
AppSocket Enabled: Yes
NetBEUI Enabled: Yes
Help Information
To print the Configuration Sheet.
Press MENU up or down to PRINT
Press ITEM up or down to CONFIG SHEET
Press ENTER
To print the Menu Map:
Press MENU up or down to PRINT
Press ITEM up or down to MENU MAP
Press ENTER
To print the Tips & Tricks Sheet.
Press MENU up or down to PRINT
Press ITEM up or down to TIPS & TRICKS
Press ENTER
Visit our web site at: http://xerox.networkprinters.com/products/NC60
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Adobe PostScript 3

Press	Display Reads
On Line	< OFF LINE >
Menu	< CONTROL >
Next - until	< PRINT >
Enter	< STARTUP >
Next - until	< SETTINGS >
Enter	< YES >
Enter	< PROCESSING >

This page lists the printer configuration and network settings. The customer should retain a copy of this page. If you replace the ESS, PWB all of these setting will be lost.

Xerox

DocuPrint C55mp

Color Laser Printer

Current Settings

General Information
Serial Number: D3V-030361
Startup Page Enabled: Yes
AppleTalk Name: DocuPrint C55
Software and Memory
Total RAM Installed: 24 MB
Software Version: 3.3.4
Software Part Number: 537E56350
Engine Software Version: 66
Interpreters: Postscript and PCL 5C
Adobe Postscript Version: 2016.105
Print Counts
Total Pages: 2404
Fuser: 1634 Prints
Print Drum: 3523 Images
Black Developer: 2373 Images
Color Developer: 1074 Images
Timing
Wait Timeout: 60 Seconds
Manual Feed Timeout: 2 Minutes
Hold Job Timeout: 60 Seconds
PowerSaverDelay: I0 Minutes
Hard Disk
Installed: No
Print Media
Tray I Paper Size: Letter (81/2x I I in.)
Tray 2 Paper Size: Not Installed
Custom Paper Size: 81/2 x 13 in
Support and Supplies
Xerox Supplies Phone Number:
Dealer Supplies Phone Number:
Xerox Service Phone Number:
Dealer Service Phone Number:
Media Server
Enabled: Not Installed
Parallel Settings
Enabled: Yes
Mode: AutoSelect
Handshake: Bi-Directional
Serial Settings
Enabled: Not Installed
LocalTalk Settings
Enabled: Not Installed

Network Settings
Network Card Type: Ethernet
Network Card S/W: Rev 4.02 3/21 1997 10:57
Card Address: 00:00:AA:55:2A:C4
Connector Type: BNC
EtherTalk
Enabled: Yes
Mode: AutoSelect
Zone: *
Phase: 2
Type: LaserWriter
Novell IPX
Type: Bindery
Print Server
Mode: AutoSelect
IPX Encapsule: Adaptive
Primary Server:
Print Server Name: XRX552AC4
Queue Scan Rate: 2
TCP/IP
IP Address Resolution: Static
CurrentIPAddress: 13.139.1.10
Subnet Mask: 255.255.0.0
Default Gateway: 152.51.1.222
TFTP
Enabled: Yes
LPR
. Enabled: Yes
Mode: AutoSelect
Print Host:
Banner Page: No
Appsocket
Enabled: Yes
Mode: AutoSelect
Telnet
Status Enabled: Yes
Menu Enabled: Yes
NetBEUI
Enabled: Yes
Group: ENGINE
Name: XEROX-55.2a.c4
Remark:
Service: XeroxColor
SNMP
System Contact:
System Name: Xerox Color Laser
System Location:
HTTP
PrinterURLAddress: http:HI3.139.1.10
Printing Enabled: Yes

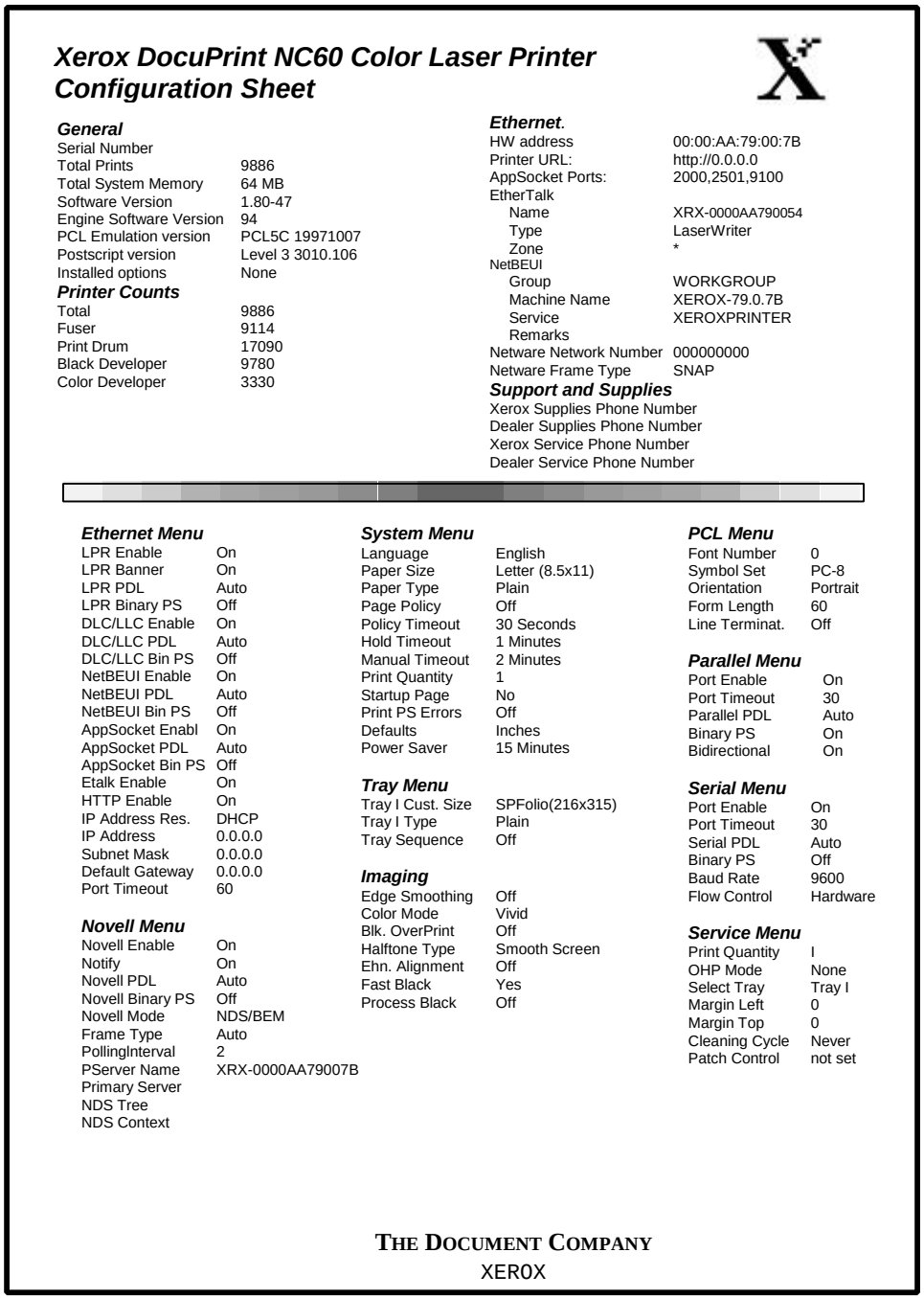
THE DOCUMENT COMPANY

Visit our web site at: Http://xerox.networkprinters.com/products/c55

CONFIGURATION [NC60]

Press	Display Reads
Menu Up - until	Menus Print
Item Down - until	Print Config Sheet
Enter	Processing . . . Config Sheet

This is the configuration page it lists the printer configuration and network settings. The customer should retain a copy of this page. If you replace the ESS, PWB all of these setting will be lost.



Xerox DocuPrint NC60 Color Laser Printer
Configuration Sheet

General

Serial Number	
Total Prints	9886
Total System Memory	64 MB
Software Version	1.80-47
Engine Software Version	94
PCL Emulation version	PCL5C 19971007
Postscript version	Level 3 3010.106
Installed options	None

Printer Counts

Total	9886
Fuser	9114
Print Drum	17090
Black Developer	9780
Color Developer	3330

Ethernet.

HW address	00:00:AA:79:00:7B
Printer URL:	http://0.0.0.0
AppSocket Ports:	2000,2501,9100
EtherTalk	
Name	XRX-0000AA790054
Type	LaserWriter
Zone	*
NetBEUI	
Group	WORKGROUP
Machine Name	XEROX-79.0.7B
Service	XEROXPRINTER
Remarks	
Netware Network Number	000000000
Netware Frame Type	SNAP

Support and Supplies

Xerox Supplies Phone Number
Dealer Supplies Phone Number
Xerox Service Phone Number
Dealer Service Phone Number

Ethernet Menu

LPR Enable	On
LPR Banner	On
LPR PDL	Auto
LPR Binary PS	Off
DLC/LLC Enable	On
DLC/LLC PDL	Auto
DLC/LLC Bin PS	Off
NetBEUI Enable	On
NetBEUI PDL	Auto
NetBEUI Bin PS	Off
AppSocket Enabl	On
AppSocket PDL	Auto
AppSocket Bin PS	Off
Etalk Enable	On
HTTP Enable	On
IP Address Res.	DHCP
IP Address	0.0.0.0
Subnet Mask	0.0.0.0
Default Gateway	0.0.0.0
Port Timeout	60

Novell Menu

Novell Enable	On
Notify	On
Novell PDL	Auto
Novell Binary PS	Off
Novell Mode	NDS/BEM
Frame Type	Auto
PollingInterval	2
PServer Name	XRX-0000AA79007B
Primary Server	
NDS Tree	
NDS Context	

System Menu

Language	English
Paper Size	Letter (8.5x11)
Paper Type	Plain
Page Policy	Off
Policy Timeout	30 Seconds
Hold Timeout	1 Minutes
Manual Timeout	2 Minutes
Print Quantity	1
Startup Page	No
Print PS Errors	Off
Defaults	Inches
Power Saver	15 Minutes

Tray Menu

Tray I Cust. Size	SPFolio(216x315)
Tray I Type	Plain
Tray Sequence	Off

Imaging

Edge Smoothing	Off
Color Mode	Vivid
Blk. OverPrint	Off
Halftone Type	Smooth Screen
Ehn. Alignment	Off
Fast Black	Yes
Process Black	Off

PCL Menu

Font Number	0
Symbol Set	PC-8
Orientation	Portrait
Form Length	60
Line Terminat.	Off

Parallel Menu

Port Enable	On
Port Timeout	30
Parallel PDL	Auto
Binary PS	On
Bidirectional	On

Serial Menu

Port Enable	On
Port Timeout	30
Serial PDL	Auto
Binary PS	Off
Baud Rate	9600
Flow Control	Hardware

Service Menu

Print Quantity	I
OHP Mode	None
Select Tray	Tray I
Margin Left	0
Margin Top	0
Cleaning Cycle	Never
Patch Control	not set

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DIAGNOSTIC SHEET (C55/C55mp)

Press	Display Reads
On Line	< OFF LINE >
Menu	< CONTROL >
Next - until	< SERVICE >
Enter	< TEST PATTERNS >
Enter	<PRINT PQ SET>
Next - until	< DIAGNOSTICS >
Enter	< YES >
Enter	< PROCESSING >

This page lists the many of the NVM values for the printer. For a detailed explanation of this, page refer to Section 3 ESS GENERATED TEST PATTERNS.

Xerox
DocuPrint C55mp
Color Laser Printer

Printer Diagnostics

Process Control Status
- Black: Okay
- Cyan: Okay
- Magenta: Okay
- Yellow: Okay
- Calibration: Okay

Density Rate Setpoints
- Black: 90
- Cyan: 90
- Magenta: 90
- Yellow: 90

Toner Concentration
- Setpoint
  - Black: 91
  - Cyan: 94
  - Magenta: 102
  - Yellow: 96
- Control Point
  - Black: 89
  - Cyan: 94
  - Magenta: 100
  - Yellow: 88
- Value
  - Black: 92
  - Cyan: 94
  - Magenta: 102
  - Yellow: 84

Process Voltage
- Transfer Bias
  - Paper 1400 Volts
  - OHP 2200 Volts
- Developer Bias
  - Black: 357 Volts
  - Cyan: 364 Volts
  - Magenta: 421 Volts
  - Yellow: 374 Volts

General Information
- Software Version: x.x.x
- Software Part Number:xxxxxxxx
- Engine software Version: xx
- Serial Number: xxx xxx xxx
- Total Ram Installed: 24
  - Base: 8 Mb
  - J8/J9: 16 Mb
  - J10/J11: 0 Mb
- Total Pages
- Binary Lossy Counter: 0 Prints
- Contone Lossy Counter: 0 Prints
- Relative Humidity: 20 Counts
- Temperature: 107° Counts
- Fuser Temperature: 157° Counts

Consumable Usage Status
- Fuser: xxx Prints
- Print Drum: 939 Images
- Fuser Oil: Okay
- Black Developer: xxx Images
- Color Developers
  - Cyan: xx Images
  - Magenta: xx Images
  - Yellow: xx Images

Print Counts
- Total Pages: xxxxx
- Black: xxxxx
- Cyan: xxxxx
- Magenta: xxxxx
- Yellow: xxxxx

Adjustments
- Top Margin: +0mm
- Left Margin: +0mm
- Cleaning Cycle: Never
- TC Patch Control: Yes

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DIAGNOSTIC SHEET [NC60]

Press	Display Reads
Menu Up - until	Menus Service Menu
Item Down - until	Print Diag. Summary
Enter	Processing . . . Diag Summary

This page lists the many of the NVM values for the printer. For a detailed explanation of this page, refer to Section 3 ESS GENERATED TEST PATTERNS.

Xerox DocuPrint NC60 Color Laser Printer
Diagnostic Sheet

General Information

Serial Number:	xxx-xxxxxx
Software Version:	1.80-39 I NL.ROM
Engine Software Version:	94
Total System Memory:	64
Base:	32 MB
J3	32MB
J4	0 MB
J5	0 MB
J6	0 MB
Binary Lossy Counter:	0
Contone Lossy Counter:	0
Relative Humidity:	20
Temperature:	107
Fuser Temperature:	157

Print Counts

Total	xxxxx
Black	xxxxx
Cyan	xxxxx
Magenta	xxxxx
Yellow	xxxxx

Consumable Usage Status

Fuser:	xxx
Print Drum:	xxx
Fuser Oil:	Okay
Black Developer:	xxx
Color Developers	
Cyan	xx
Magenta	xx
Yellow	xx

Adjustments

Top Margin	0.0
Left Margin	0.0
Cleaning Cycle	Never
TC Patch Control	Off
Fast Black	On
Extra Toner	On
Cyclic toneup	On
OHP Mode	None

Process Control Status

Black	OK
Cyan	OK
Magenta	OK
Yellow	OK
Calibration	OK

Density Rate Set Points

Black	90
Cyan	90
Magenta	90
Yellow	90
Color Balance	Default

Gamma Set Points

Black	41
Cyan	61
Magenta	64
Yellow	62

Toner Concentration

Set Point	
Black	95
Cyan	112
Magenta	110
Yellow	102
Control Point	
Black	103
Cyan	112
Magenta	103
Yellow	102
Value	
Black	103
Cyan	105
Magenta	92
Yellow	103
Delta	
Black	0
Cyan	7
Magenta	11
Yellow	-1

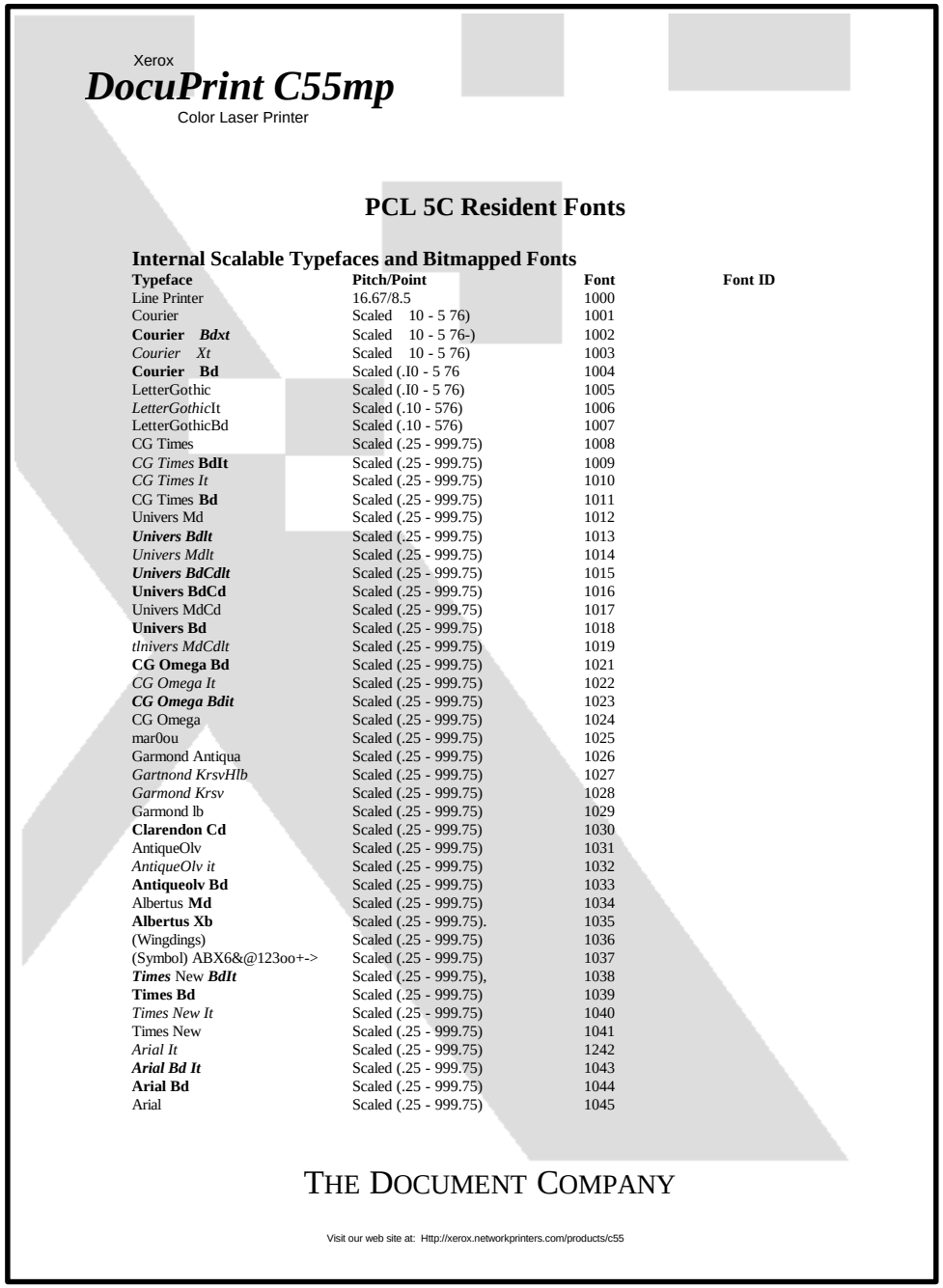
Adjustments

Transfer Bias	
Paper	
High	1000 Volts/105 volts
Normal	1000 Volts/105 volts
Low	1200 Volts/105 volts
OHP	
High	2200 Volts/200 volts
Normal	2000 Volts/200 volts
Low	2200 Volts/105 volts
Developer Bias	
Black	265 Volts
Cyan	345 Volts
Magenta	345 Volts
Yellow	341 Volts

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Press	Display Reads
On Line	< OFF LINE >
Menu	< CONTROL >
Next - until	< PRINT >
Enter	< STARTUP >
Next - until	< PCL FONT >
Enter	< YES >
Enter	< PROCESSING >

This page lists the PCL Fonts which are resident on the ESS. This will vary somewhat from printer to printer.



Xerox

DocuPrint C55mp

Color Laser Printer

PCL 5C Resident Fonts

Internal Scalable Typefaces and Bitmapped Fonts

Typeface	Pitch/Point	Font	Font ID
Line Printer	16.67/8.5	1000	
Courier	Scaled 10 - 5 76)	1001	
Courier *Bdxt*	Scaled 10 - 5 76-)	1002	
Courier Xt	Scaled 10 - 5 76)	1003	
Courier Bd	Scaled (.I0 - 5 76	1004	
LetterGothic	Scaled (.I0 - 5 76)	1005	
*LetterGothic*It	Scaled (.10 - 576)	1006	
LetterGothicBd	Scaled (.10 - 576)	1007	
CG Times	Scaled (.25 - 999.75)	1008	
CG Times **BdIt**	Scaled (.25 - 999.75)	1009	
CG Times It	Scaled (.25 - 999.75)	1010	
CG Times **Bd**	Scaled (.25 - 999.75)	1011	
Univers Md	Scaled (.25 - 999.75)	1012	
Univers Bdlt	Scaled (.25 - 999.75)	1013	
Univers Mdlt	Scaled (.25 - 999.75)	1014	
Univers BdCdlt	Scaled (.25 - 999.75)	1015	
Univers BdCd	Scaled (.25 - 999.75)	1016	
Univers MdCd	Scaled (.25 - 999.75)	1017	
Univers Bd	Scaled (.25 - 999.75)	1018	
tlnivers MdCdlt	Scaled (.25 - 999.75)	1019	
CG Omega Bd	Scaled (.25 - 999.75)	1021	
CG Omega It	Scaled (.25 - 999.75)	1022	
CG Omega Bdit	Scaled (.25 - 999.75)	1023	
CG Omega	Scaled (.25 - 999.75)	1024	
mar0ou	Scaled (.25 - 999.75)	1025	
Garmond Antiqua	Scaled (.25 - 999.75)	1026	
Gartnond KrsvHlb	Scaled (.25 - 999.75)	1027	
Garmond Krsv	Scaled (.25 - 999.75)	1028	
Garmond lb	Scaled (.25 - 999.75)	1029	
Clarendon Cd	Scaled (.25 - 999.75)	1030	
AntiqueOlv	Scaled (.25 - 999.75)	1031	
AntiqueOlv it	Scaled (.25 - 999.75)	1032	
Antiqueolv Bd	Scaled (.25 - 999.75)	1033	
Albertus **Md**	Scaled (.25 - 999.75)	1034	
Albertus Xb	Scaled (.25 - 999.75).	1035	
(Wingdings)	Scaled (.25 - 999.75)	1036	
(Symbol) ABX6&@123oo+->	Scaled (.25 - 999.75)	1037	
Times New ***BdIt***	Scaled (.25 - 999.75),	1038	
Times Bd	Scaled (.25 - 999.75)	1039	
Times New It	Scaled (.25 - 999.75)	1040	
Times New	Scaled (.25 - 999.75)	1041	
Arial It	Scaled (.25 - 999.75)	1242	
Arial Bd It	Scaled (.25 - 999.75)	1043	
Arial Bd	Scaled (.25 - 999.75)	1044	
Arial	Scaled (.25 - 999.75)	1045	

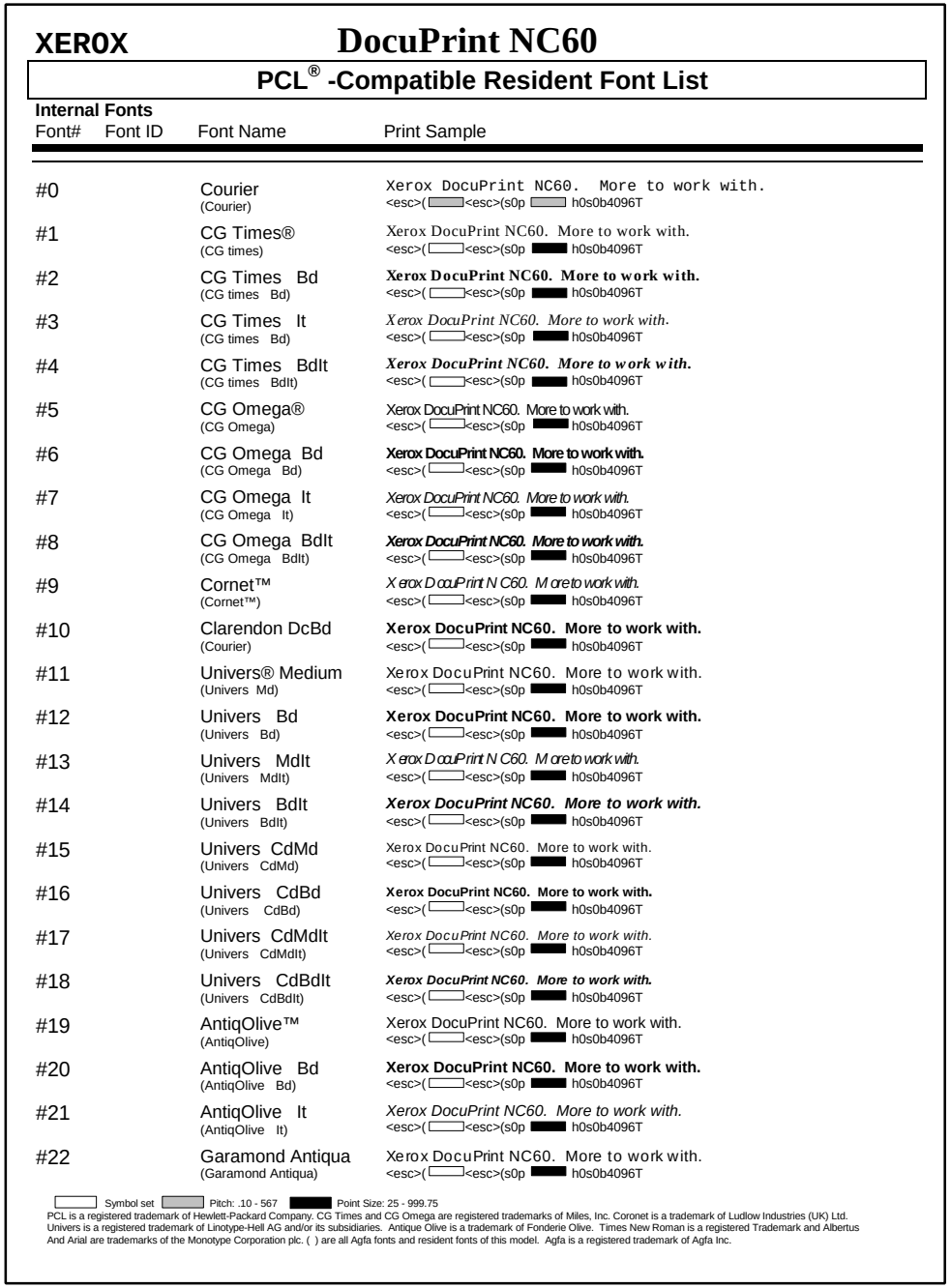
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PCL FONT [NC60]

Press	Display Reads
Menu Up - until	Menus Print
Item Down - until	Print PCL Fonts
Enter	Processing . . . PCL Fonts

This is page one of a two page menu and lists the 45 PCL Fonts which are resident on the ESS. This may vary somewhat from printer to printer.



XEROX **DocuPrint NC60**

PCL® -Compatible Resident Font List

Internal Fonts

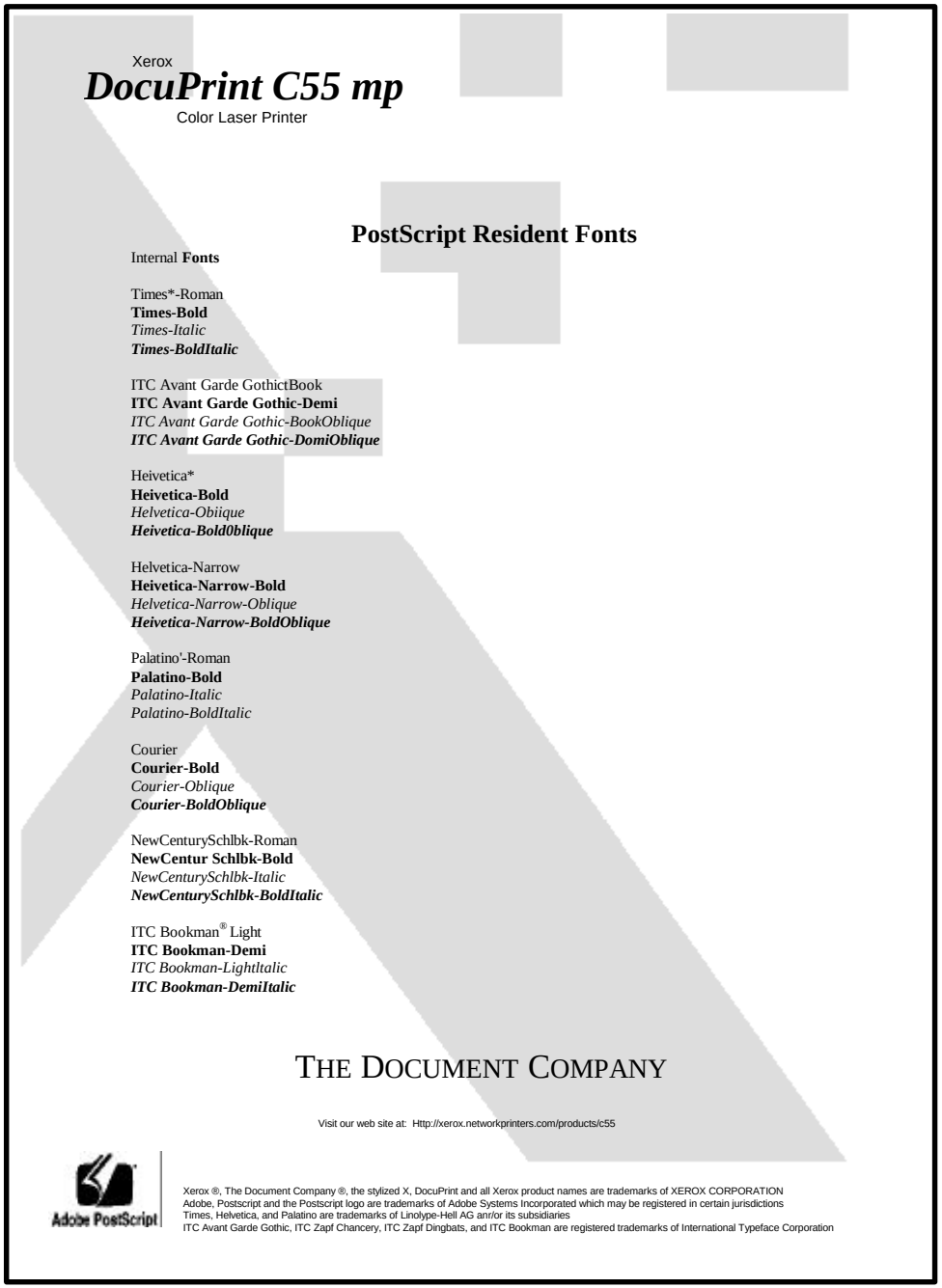
Font#	Font ID	Font Name	Print Sample
#0		Courier (Courier)	Xerox DocuPrint NC60. More to work with. <esc>(<esc>(s0p h0s0b4096T
#1		CG Times® (CG times)	Xerox DocuPrint NC60. More to work with. <esc>(<esc>(s0p h0s0b4096T
#2		CG Times Bd (CG times Bd)	**Xerox DocuPrint NC60. More to work with.** <esc>(<esc>(s0p h0s0b4096T
#3		CG Times It (CG times Bd)	*Xerox DocuPrint NC60. More to work with.* <esc>(<esc>(s0p h0s0b4096T
#4		CG Times BdIt (CG times BdIt)	***Xerox DocuPrint NC60. More to work with.*** <esc>(<esc>(s0p h0s0b4096T
#5		CG Omega® (CG Omega)	Xerox DocuPrint NC60. More to work with. <esc>(<esc>(s0p h0s0b4096T
#6		CG Omega Bd (CG Omega Bd)	**Xerox DocuPrint NC60. More to work with.** <esc>(<esc>(s0p h0s0b4096T
#7		CG Omega It (CG Omega It)	*Xerox DocuPrint NC60. More to work with.* <esc>(<esc>(s0p h0s0b4096T
#8		CG Omega BdIt (CG Omega BdIt)	***Xerox DocuPrint NC60. More to work with.*** <esc>(<esc>(s0p h0s0b4096T
#9		Cornet™ (Cornet™)	*Xerox DocuPrint NC60. More to work with.* <esc>(<esc>(s0p h0s0b4096T
#10		Clarendon DcBd (Courier)	**Xerox DocuPrint NC60. More to work with.** <esc>(<esc>(s0p h0s0b4096T
#11		Univers® Medium (Univers Md)	Xerox DocuPrint NC60. More to work with. <esc>(<esc>(s0p h0s0b4096T
#12		Univers Bd (Univers Bd)	**Xerox DocuPrint NC60. More to work with.** <esc>(<esc>(s0p h0s0b4096T
#13		Univers MdIt (Univers MdIt)	*Xerox DocuPrint NC60. More to work with.* <esc>(<esc>(s0p h0s0b4096T
#14		Univers BdIt (Univers BdIt)	***Xerox DocuPrint NC60. More to work with.*** <esc>(<esc>(s0p h0s0b4096T
#15		Univers CdMd (Univers CdMd)	Xerox DocuPrint NC60. More to work with. <esc>(<esc>(s0p h0s0b4096T
#16		Univers CdBd (Univers CdBd)	**Xerox DocuPrint NC60. More to work with.** <esc>(<esc>(s0p h0s0b4096T
#17		Univers CdMdIt (Univers CdMdIt)	*Xerox DocuPrint NC60. More to work with.* <esc>(<esc>(s0p h0s0b4096T
#18		Univers CdBdIt (Univers CdBdIt)	***Xerox DocuPrint NC60. More to work with.*** <esc>(<esc>(s0p h0s0b4096T
#19		AntiqOlive™ (AntiqOlive)	Xerox DocuPrint NC60. More to work with. <esc>(<esc>(s0p h0s0b4096T
#20		AntiqOlive Bd (AntiqOlive Bd)	**Xerox DocuPrint NC60. More to work with.** <esc>(<esc>(s0p h0s0b4096T
#21		AntiqOlive It (AntiqOlive It)	*Xerox DocuPrint NC60. More to work with.* <esc>(<esc>(s0p h0s0b4096T
#22		Garamond Antiqua (Garamond Antiqua)	Xerox DocuPrint NC60. More to work with. <esc>(<esc>(s0p h0s0b4096T

Symbol set Pitch: .10 - 567 Point Size: 25 - 999.75

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Press	Display Reads
On Line	< OFF LINE >
Menu	< CONTROL >
Next - until	< PRINT >
Enter	< STARTUP >
Next - until	< PS FONTS >
Enter	< YES >
Enter	< PROCESSING >

This page lists the PostScript Fonts which are resident on the ESS. This will vary somewhat from printer to printer.



Xerox

DocuPrint C55 mp

Color Laser Printer

PostScript Resident Fonts

Internal **Fonts**

Times*-Roman
Times-Bold
Times-Italic
Times-BoldItalic

ITC Avant Garde GothictBook
ITC Avant Garde Gothic-Demi
ITC Avant Garde Gothic-BookOblique
ITC Avant Garde Gothic-DomiOblique

Heivetica*
Heivetica-Bold
Helvetica-Obiique
Heivetica-Bold0blique

Helvetica-Narrow
Heivetica-Narrow-Bold
Helvetica-Narrow-Oblique
Heivetica-Narrow-BoldOblique

Palatino'-Roman
Palatino-Bold
Palatino-Italic
Palatino-BoldItalic

Courier
Courier-Bold
Courier-Oblique
Courier-BoldOblique

NewCenturySchlbk-Roman
NewCentur Schlbk-Bold
NewCenturySchlbk-Italic
NewCenturySchlbk-BoldItalic

ITC Bookman® Light
ITC Bookman-Demi
ITC Bookman-LightItalic
ITC Bookman-DemiItalic

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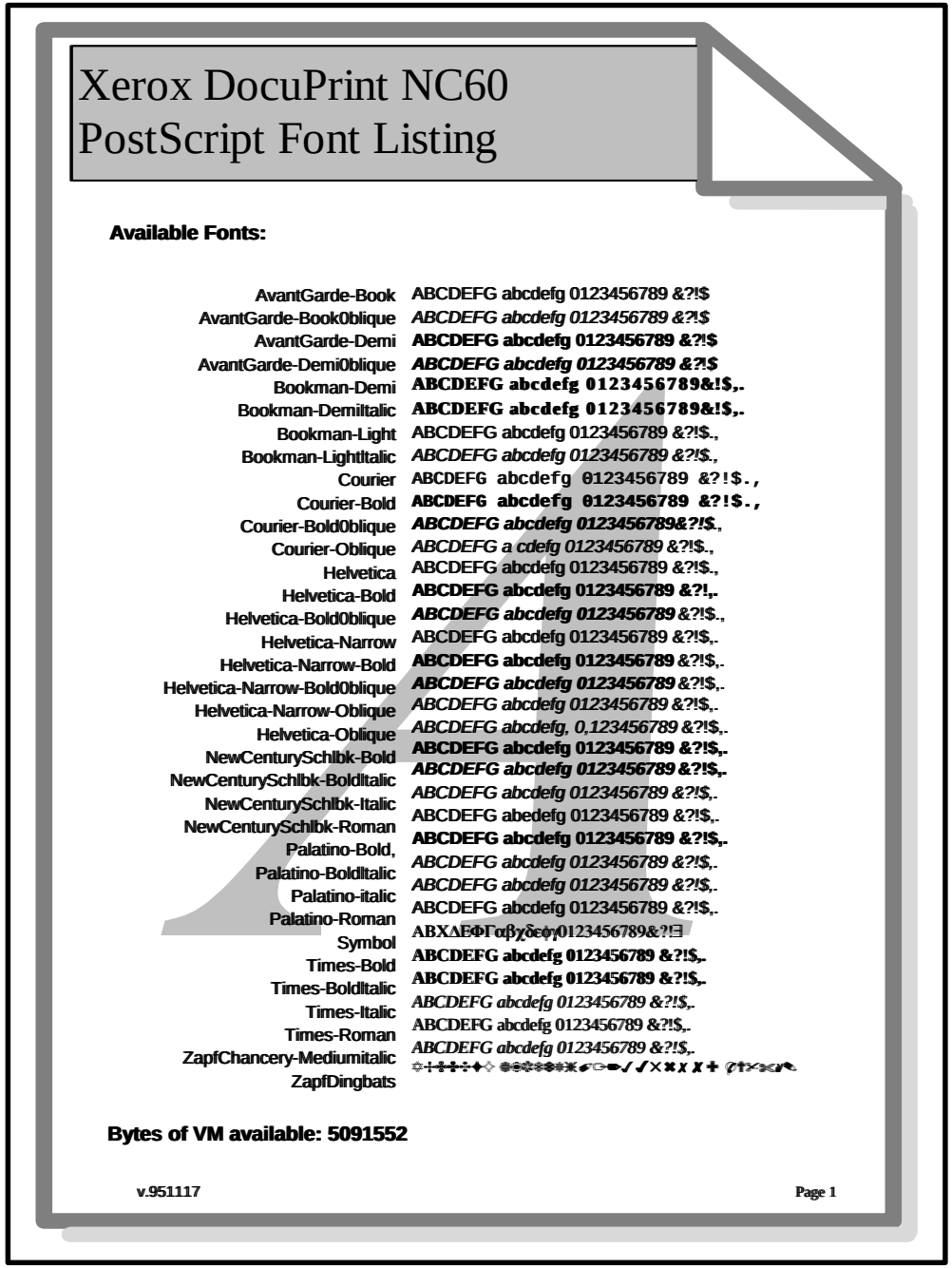
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PS FONT LIST [NC60]

Press	Display Reads
Menu Up - until	Menus Print
Item Down - until	Print PS Font List
Enter	Processing . . . PostScript

This page lists the PostScript fonts which are resident on the ESS. This may vary from printer to printer.



Xerox DocuPrint NC60
PostScript Font Listing

Available Fonts:

AvantGarde-Book ABCDEFG abcdefg 0123456789 &?!$
AvantGarde-BookOblique *ABCDEFG abcdefg 0123456789 &?!$*
AvantGarde-Demi **ABCDEFG abcdefg 0123456789 &?!$**
AvantGarde-DemiOblique ***ABCDEFG abcdefg 0123456789 &?!$***
Bookman-Demi **ABCDEFG abcdefg 0123456789&!$,.**
Bookman-DemiItalic **ABCDEFG abcdefg 0123456789&!$,.**
Bookman-Light ABCDEFG abcdefg 0123456789 &?!$.,
Bookman-LightItalic *ABCDEFG abcdefg 0123456789 &?!$.,*
Courier ABCDEFG abcdefg 0123456789 &?!$.,
Courier-Bold **ABCDEFG abcdefg 0123456789 &?!$.,**
Courier-BoldOblique ***ABCDEFG abcdefg 0123456789&?!$.,***
Courier-Oblique *ABCDEFG a cdefg 0123456789 &?!$.,*
Helvetica ABCDEFG abcdefg 0123456789 &?!$.,
Helvetica-Bold **ABCDEFG abcdefg 0123456789 &?!,.**
Helvetica-BoldOblique ***ABCDEFG abcdefg 0123456789*** &?!$.,
Helvetica-Narrow ABCDEFG abcdefg 0123456789 &?!$,.
Helvetica-Narrow-Bold **ABCDEFG abcdefg 0123456789** &?!$,.
Helvetica-Narrow-BoldOblique ***ABCDEFG abcdefg 0123456789*** &?!$,.
Helvetica-Narrow-Oblique *ABCDEFG abcdefg 0123456789 &?!$,.*
Helvetica-Oblique *ABCDEFG abcdefg, 0,123456789 &?!$,.*
NewCenturySchlbk-Bold **ABCDEFG abcdefg 0123456789 &?!$,.**
NewCenturySchlbk-BoldItalic ***ABCDEFG abcdefg 0123456789 &?!$,.***
NewCenturySchlbk-Italic *ABCDEFG abcdefg 0123456789 &?!$,.*
NewCenturySchlbk-Roman ABCDEFG abedefg 0123456789 &?!$,.
Palatino-Bold, **ABCDEFG abcdefg 0123456789 &?!$,.**
Palatino-BoldItalic *ABCDEFG abcdefg 0123456789 &?!$,.*
Palatino-italic *ABCDEFG abcdefg 0123456789 &?!$,.*
Palatino-Roman ABCDEFG abcdefg 0123456789 &?!$,.
Symbol ΑΒΧΔΕΦΓαβχδεφη0123456789&?!∃
Times-Bold **ABCDEFG abcdefg 0123456789 &?!$,.**
Times-BoldItalic **ABCDEFG abcdefg 0123456789 &?!$,.**
Times-Italic *ABCDEFG abcdefg 0123456789 &?!$,.*
Times-Roman ABCDEFG abcdefg 0123456789 &?!$,.
ZapfChancery-MediumItalic *ABCDEFG abcdefg 0123456789 &?!$,.*
ZapfDingbats ✡✢✣✤✥✦✧ ❁❂❃❄❇❈❉❊❋❍❏❐❑❒❖❘❙❚❯❱❲❳❨❩❬❭❮❰❱❲❳❴❵

Bytes of VM available: 5091552

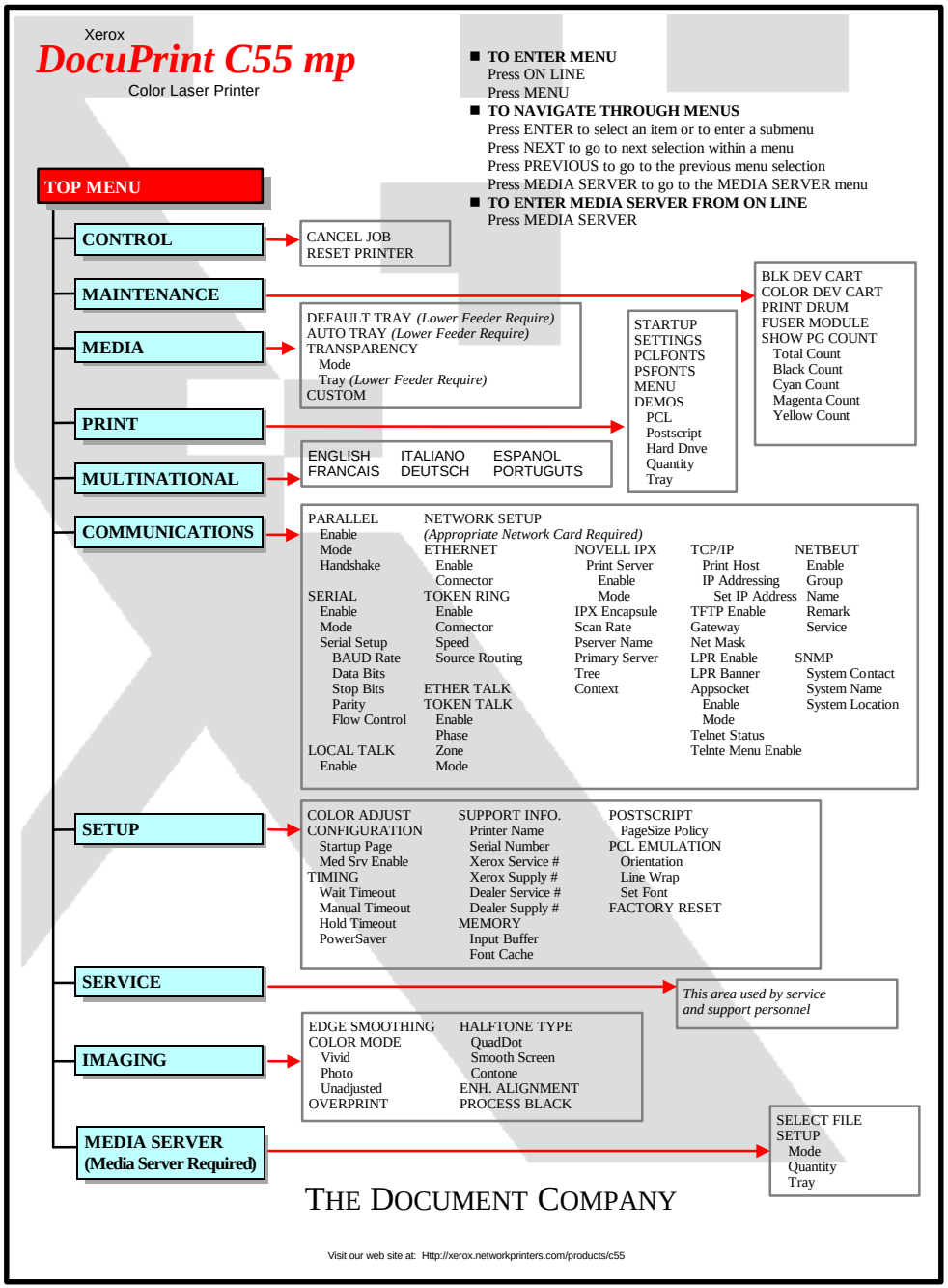
v.951117 Page 1

MENU (C55/C55mp)

Press	Display Reads
On Line	< OFF LINE >
Menu	< CONTROL >
Next - until	< PRINT >
Enter	< STARTUP >
Next - until	< MENU >
Enter	< YES >
Enter	< PROCESSING >

This is the Menu page. It shows a overall view of the Menu structure on the C55.

The Service Menu is not shown since it is not used by the customer.



MENU MAP [NC60]

Press	Display Reads
Menu Up - until	Menus Print
Item Down - until	Print Menu Map
Enter	Processing . . . Menu Map

This is the Menu page. It shows the first two layers of the Menu structure on the NC60

Xerox DocuPrint NC60 Color Laser Printer
Menu Map

Job Menu
- Cancel Job
- Form Feed
- Restart Pnnter

Password Menu
- Enter Password
- Print
- Delete

Tray Menu
- Tray I Cost. Size
- Tray I Type
- Tray Sequence

PCL Menu
- Font Number
- Pitch
- Point Size
- Symbol Set
- Orientation
- Fom Length
- Line Terminat.

System Menu
- Language
- Paper Size
- Paper Type
- Page Policy
- Policy Timeout
- Hold Timeout
- Manual Timeout
- Print Quantity
- Startup Page
- Print PS Errors
- Defaults
- Power Saver

Color Adjust
- Color Density
- Black Density
- Color Balance
- Cancel Changes
- Color Defaults

Imaging
- Edge Smoothing
- Color Mode
- Blk. OverPrint
- Halftone Type
- Ehn. Alignment
- Fast Black
- Process Black

Parallel Menu
- Port Enable
- Port Timeout
- Parallel PDL
- Binary PS
- Bidirectional

Setial Menu
- Port Enable
- Port Timeout
- Serial PDL
- Binary PS
- Baud Rate
- Flow Control

Ethernet Menu
- LPR Enable
- LPR Banner
- LPR PDL
- LPR Binary PS
- DLC/DLL Enable
- DLC/DLL PDL
- DLC/DLL Bin PS
- NetBEUI Enable
- NetBEUI PDL
- NetBeui Bin PS
- AppSocket Enabl
- AppSocket PDL
- AppSocket Bin PS
- Etalk Enable
- HTTP Enable
- IP Address Res.
- IP Address
- Subnet Mask
- Default Gateway
- Port Timeout

Novell Menu
- Novell Enable
- Notify
- Novell PDL
- Novell Binary PS
- Novell Mode
- Frame Type
- PollingInterval
- PServer Name
- Priniary Server
- NDS Tree
- NDS Context

Print Menu
- Startup Page
- Config Sheet
- PCL Font List
- PS Font List
- PS Demo
- Menu Map
- Fault History
- Tips & Tricks
- Disk Directory
- Print Quantity
- Select Tray

Media Server
- Select File
- Print Quantity
- Select Tray

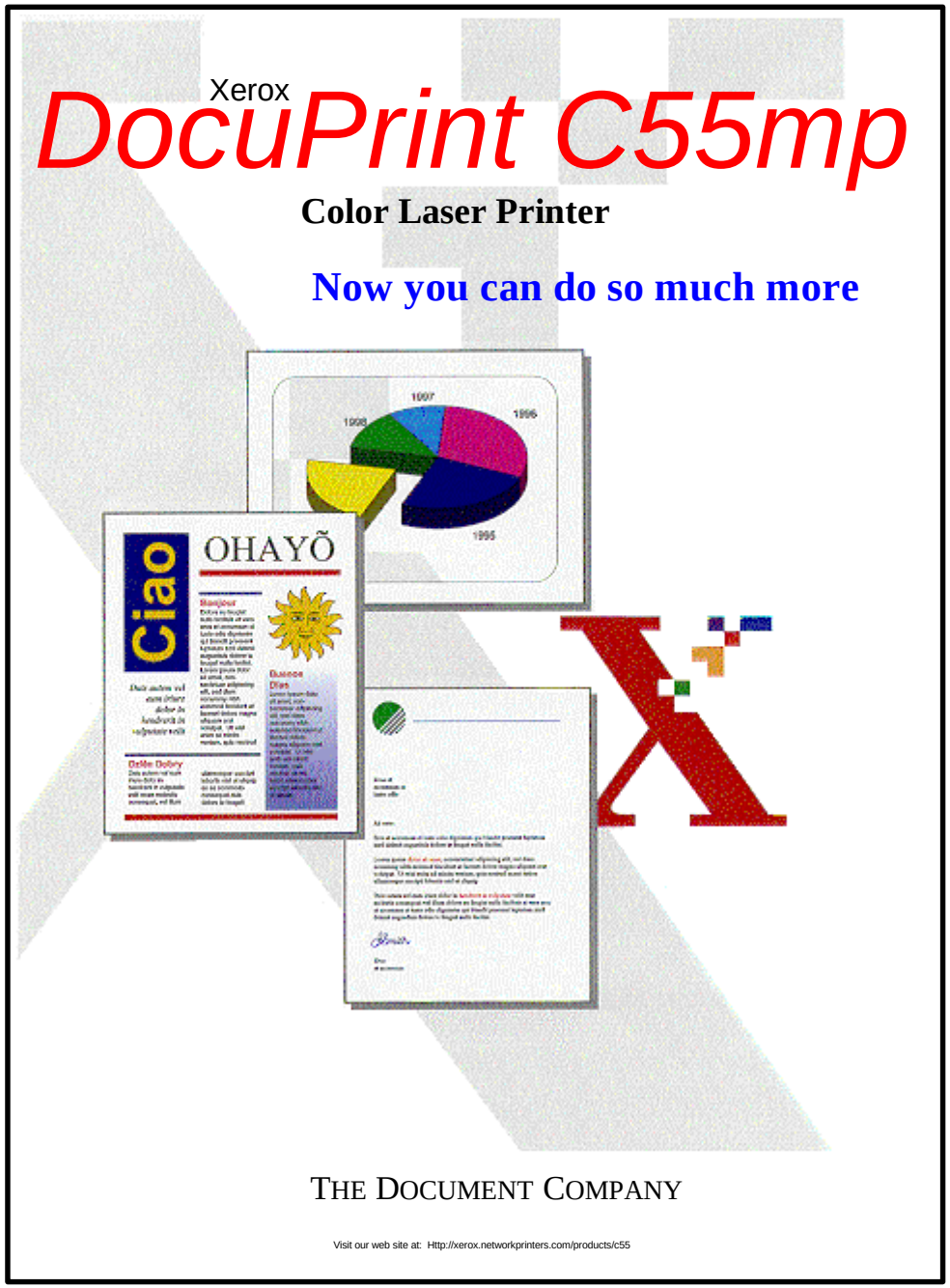
Service Menu
- Config Sheet
- Diag. Summary
- Print PQ Set
- Test Patterns
- Print Quantity
- OHP Mode
- Select Tray
- Margin Left
- Margin Top
- Cleaning Cycle
- Patch Control
- Show Page Counts
- Show Setpoints
- CRU Usage
- Lossy Counter
- Faults Active
- Fault History
- S/W Levels

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PCL DEMO (C55/C55mp)

Press	Display Reads
On Line	< OFF LINE >
Menu	< CONTROL >
Next - until	< PRINT >
Enter	< STARTUP >
Next - until	< DEMOS >
Enter	< PCL >
Enter	< QUANTITY >
Enter	< 1 >
Enter	< RUN JOB >
Enter	< YES >
Enter	< PROCESSING >

This is a demo of some PCL 5C capabilities.



Press	Display Reads
Menu Up - until	Menus Print
Item Down - until	Print Fault History
Enter	Processing . . . Fault History

This page lists the last 50 Faults which have occurred on the NC60.

Xerox DocuPrint NC60 Color Laser Printer
Fault History Sheet

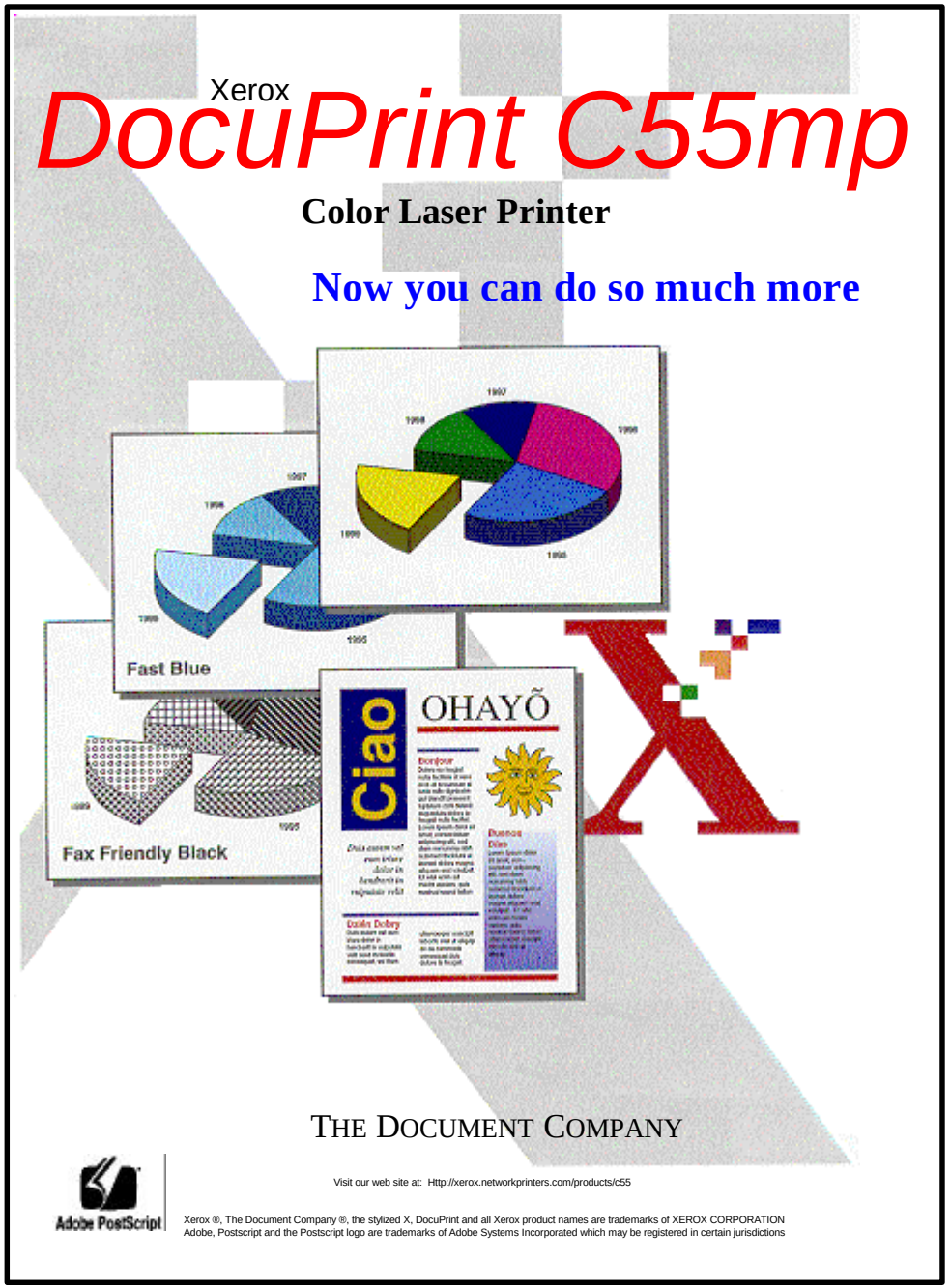
Page Count	Fault Description . .
1725	E7 PRINT DRUM , JAM OPEN PRINTER
1678	E4 INPUT JAM , OPEN PRINTER
1650	E5 FUSER , JAM OPEN PRINTER
01600	E4 INPUT JAM , OPEN PRINTER
1590	E1 TRAY 1 JAM , JAM OPEN PRINTER
1575	E1 TRAY 1 JAM , JAM OPEN PRINTER
1500	E4 INPUT JAM , OPEN PRINTER
1456	E8 OUTPUT JAM , OPEN PRINTER
1389	E7 PRINT DRUM , JAM OPEN PRINTER
1350	E4 INPUT JAM , OPEN PRINTER
1300	E5 FUSER , JAM OPEN PRINTER
1256	E4 INPUT JAM , OPEN PRINTER
1202	E1 TRAY 1 JAM , JAM OPEN PRINTER
1190	E1 TRAY 1 JAM , JAM OPEN PRINTER
1180	E4 INPUT JAM , OPEN PRINTER
1156	E8 OUTPUT JAM , OPEN PRINTER
1150	E7 PRINT DRUM , JAM OPEN PRINTER
1125	E4 INPUT JAM , OPEN PRINTER
1110	E5 FUSER , JAM OPEN PRINTER
1090	E4 INPUT JAM , OPEN PRINTER
1070	E1 TRAY 1 JAM , JAM OPEN PRINTER
1065	E1 TRAY 1 JAM , JAM OPEN PRINTER
1025	E4 INPUT JAM , OPEN PRINTER
1012	E8 OUTPUT JAM , OPEN PRINTER
982	E7 PRINT DRUM , JAM OPEN PRINTER
980	E4 INPUT JAM , OPEN PRINTER
975	E5 FUSER , JAM OPEN PRINTER
950	E4 INPUT JAM , OPEN PRINTER
921	E1 TRAY 1 JAM , JAM OPEN PRINTER
920	E1 TRAY 1 JAM , JAM OPEN PRINTER
900	E4 INPUT JAM , OPEN PRINTER
825	E7 PRINT DRUM , JAM OPEN PRINTER
820	E4 INPUT JAM , OPEN PRINTER
790	E5 FUSER , JAM OPEN PRINTER
766	E4 INPUT JAM , OPEN PRINTER
750	E1 TRAY 1 JAM , JAM OPEN PRINTER
725	E1 TRAY 1 JAM , JAM OPEN PRINTER
700	E4 INPUT JAM , OPEN PRINTER
670	E7 PRINT DRUM , JAM OPEN PRINTER
660	E4 INPUT JAM , OPEN PRINTER
630	E5 FUSER , JAM OPEN PRINTER
592	E4 INPUT JAM , OPEN PRINTER
590	E1 TRAY 1 JAM , JAM OPEN PRINTER
480	E1 TRAY 1 JAM , JAM OPEN PRINTER
425	E4 INPUT JAM , OPEN PRINTER
390	E7 PRINT DRUM , JAM OPEN PRINTER
300	E4 INPUT JAM , OPEN PRINTER
256	E5 FUSER , JAM OPEN PRINTER
147	E4 INPUT JAM , OPEN PRINTER
0	U-2NVRAM ERROR, POWER OFF/ON

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POSTSCRIPT DEMO (C55/C55mp)

Press	Display Reads
On Line	< OFF LINE >
Menu	< CONTROL >
Next - until	< PRINT >
Enter	< STARTUP >
Next - until	< DEMOS >
Enter	< PCL >
Next - until	< POSTSCRIPT >
Enter	< QUANTITY >
Enter	< 1 >
Enter	< RUN JOB >
Enter	< YES >
Enter	< PROCESSING >

This is a demo of some of the PostScript features.


Xerox
DocuPrint C55mp
Color Laser Printer
Now you can do so much more
Fast Blue
Fax Friendly Black
Ciao
OHAYÕ
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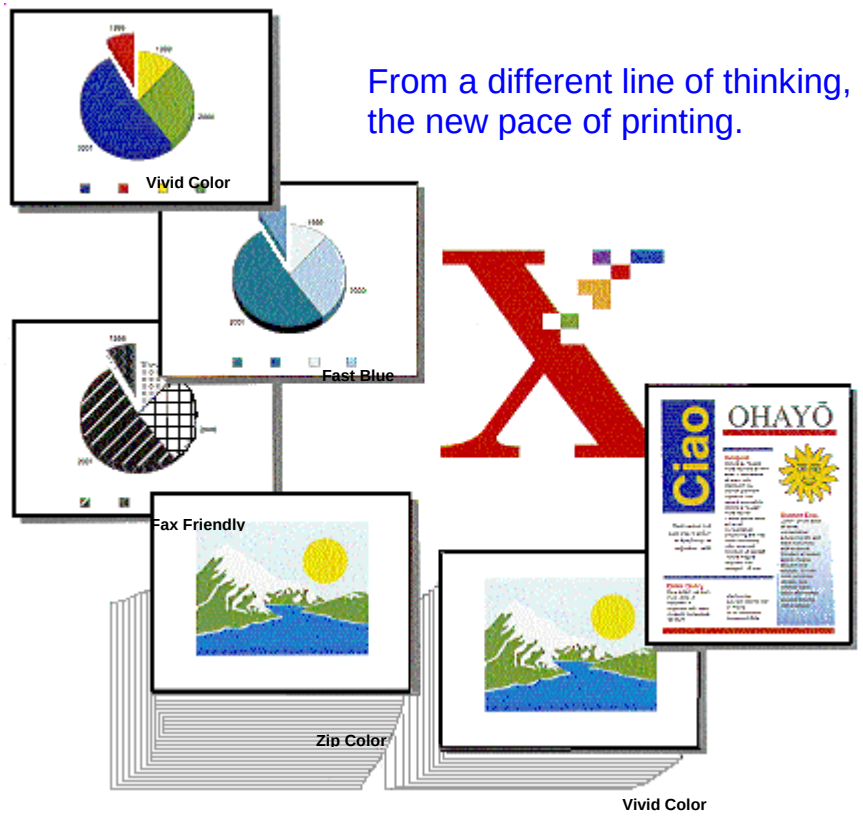
POSTSCRIPT DEMO [NC60]

Press	Display Reads
Menu Up - until	Menus Print
Menu Down - until	Print Postscript Demo
Enter	Processing . . . Postscript Demo

This is a demo of some of the PostScript features.

DocuPrint NC60

Network Color Laser Printer



From a different line of thinking,
the new pace of printing.

Visit our web site at: Http://xerox.networkprinters.com/products/NC60

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Adobe PostScript 3

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Press	Display Reads
Menu Up - until	Menus Print
Item Down - until	Print Tips & Tricks
Enter	Processing . . .

This page lists some common tips and tricks which will make printing easier.

Practical Tips for the: Xerox *DocuPrint NC60* Color Laser Printer

Your new DocuPrint NC60 was designed with many unique features to assist you in producing the highest quality color and black & white prints. These features, along with important tips on how to get the best results with your DocuPrint NC60, are explained below. For the latest product information, please check the Xerox web site at http://xerox.networkprinters.com.

PostScript Printer Driver Features

Using your PostScript Driver enables many of the features listed below.

Intelligent Color
Intelligent Color applies the optimum imaging method for documents containing a mix of photos (bitmaps), charts (graphics) and text. This setting will produce the best combination of print quality and speed for a full range of documents.

Vivid Color
When printing charts and graphs, Vivid Color will enhance your document with bright, solid colors. This setting is recommended for full color business documents.

Enhanced 1200 Image Quality
For the best print quality, choose 1200 Image Quality in your print driver. This selection will produce an ultra-smooth image, without visible 'dots' in the print. Note that with complex documents the first print might be delayed a few seconds.

Refer to the user's guide for additional color settings.

Special Purpose Printing

- *Fax Friendly Black:* Fax Friendly Black converts colors into different patterns of black and white, so you can fax or copy your document without losing any information. The document remains clear, readable, and informative.
- *Fast Blue:* Do you need faster output, but want to keep the impact of color? Fast Blue mode converts your images to shades of black and cyan (blue), while doubling the print speed to 6 ppm.
- *ZipColor:* When full color images with little text are needed quickly, ZipColor increases color print speed by 33% to 4 pages per minute. This feature will also eliminate differential gloss sometimes seen on prints containing dark graphics or photos. For the best black text quality, choose either the Intelligent Color or Vivid Color mode.

Expert Color Control.

If you want to adjust the color of your prints to better match those from another printer, Xerox provides Expert Color Controls. These controls enable you to fine-tune the colors on your printed document.

- *Color Adjustment:* Choose color adjustment from the print driver to make changes for lightness and saturation on individual print jobs.
- *Color Balance:* With Color Balance you can adjust the contrast range between colors from within the driver. This feature enables you to adjust the amount of Red, Green, and Blue in all your documents.

Image Enhancement

- *ImageFix:* Occasionally, scanned images or images downloaded from a digital camera are too dark or light, lacking contrast. ImageFix automatically corrects imperfect photographs by re-balancing, and optimizing the, image as it prints to provide optimal image quality. (Win 95/98/NT only)
- *IntelliRes:* Web sites use low resolution images to speed downloading and viewing on a monitor. However, when these images are printed the result is often unsatisfactory. IntelliRes automatically analyzes these coarse photos and smoothes them for more pleasing printed output.

Internet Printing

- *Distribute and Print:* Use your E-mail enabled print driver to distribute documents to several printers at once with a single mouse click. By simply entering the E-mail address of each destination printer and selecting "print' from your Window's application, a job can be sent to a printer anywhere.
- *Remote Administration:* Use the NC60 embedded Web server to perform any printer administration function. You can display status and diagnostics as well as configure the printer from any location.
- *Remote Monitoring:* Use any web browser to monitor and maintain your printer. You can query your consumable status or even configure the printer to automatically send an E-mail message when it needs attention.

If you have any questions please call us Toll-Free:
USA: 1-800-TeamXRX Canada: 1-800-93XEROX
or
Visit our Web site at: http://xerox.networkprinters.com

Practical Tips for the: Xerox *DocuPrint NC60* Color Laser Printer

Shared Printing

- ***Hold Job:*** Hold Job is a "wait-for-me" feature that delays printing, for a specified period of time, so you can load special media, or be present when printing starts. Press the machine's enter button when the LED is flashing to print your job. The amount of delay is set through the machine control panel or client services tools.
- ***Secure Print*:** Your NC60 printer allows you to defer printing of a job until a matching Password is entered from the Control Panel. The user assigns the Password in the Password edit box after selecting Secure Print. This feature requires the Hard Disk option be installed on your printer .
- ***Proof Print:*** When printing multiple sets, *Proof Printing* saves steps. You send your document once, and the printer processes and prints the **first** set. After you review the document, simply release the rest at the printer. This feature requires the Hard Disk option be installed on your printer .

Recommended Media

Your DocuPrint NC60 will produce brilliant color images on a wide variety of print media. Carefully choosing media for your printer is important in achieving the best images and ensuring trouble-free operation.

Paper:
Use standard office plain paper with weights from 16-24 lbs. Best results will be achieved with "laser" class papers such as Xerox Color Xpressions Paper. Avoid rough (graphic arts) papers, card-stock, heavy papers, vellum, linen papers, T-shirt transfer material, pre-printed forms, and letterhead with raised printing. Envelopes and labels designed for laser printers must be run through the manual feeder and will print in black and whit only

Transparencies:
The NC60 automatically detects transparencies and adjusts the printer to optimize print quality. To save money and produce the brightest transparencies, we recommend using clear (laser printer or copier) transparencies that **do not** have a removable stripe or paper backing. Best results will be obtained by using the low cost transparencies specifically designed for the DocuPrint NC60: Xerox 3R6256. We do not recommend transparencies designed for other types of color copiers or color printers, laser or inkjet. For reliable feeding, load a **maximum of 75** transparencies in the paper tray. When printing transparencies continuously, print 5-10 sheets of **blank** pages after each set of 75 transparencies. This will improve overall reliability and print quality when printing large volumes of transparencies.

- ***Separator Sheets:*** This convenient feature inserts a paper separator between each transparency sheet. This feature requires the Second tray feeder option be installed on your printer.

Moving Your Printer

All color laser printers require extra care and preparation before and while moving them. It is very important to remove the fuser first, and hand carry it to the new location to prevent spilling oil in the machine. ***Do not tilt the fuser.*** If the fuser has spilled oil, do not reinstall as damage to the machine could occur. Once the fuser is removed, two people should move the printer, also taking *care not to tilt the printer.* If you must ship your printer, and it will possibly NOT be kept level, more preparation is needed. Complete moving instructions can be obtained from the CD-ROM that accompanies your printer, under Technical Information Guide (TIG), Chapter 12. Alternately, contact your reseller, or the Xerox web site.

Monthly Print Volume

The DocuPrint NC60 is carefully designed to run reliably at typical office print volumes of 3,000 color prints per month. If you regularly produce considerably higher print volumes, you should consider additional printer(s) to handle peak workloads quickly, and maximize uptime.

Two-sided (Duplex) Printing

The DocuPrint NC60 is not designed for duplex printing. Using paper that has already been printed on one side may damage the printer.

Driver Configuration

Be sure to set the device options in the driver to correctly reflect your printer configuration.

Connectivity

The NC60 comes standard with 10MB Ethernet on board with the option to upgrade to 10/100MB Ethernet or TokenRing via the optional NIC slot. If you experience connectivity problems when connecting a 3rd party connectivity box to the printer parallel port, you may have to set the printer parallel port bi-directional setting to off.

If you have any questions please call us Toll-Free:
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or
Visit our Web site at: http://xerox.networkprinters.com

DENSITY AND COLOR BALANCE TEST PATTERN.

(C55/C55mp Entry)

Press	Display Reads
On Line	< OFF LINE >
Menu	< CONTROL >
Next - until	< SETUP >
Enter	< COLOR ADJUST >
Enter	< PROCESSING >

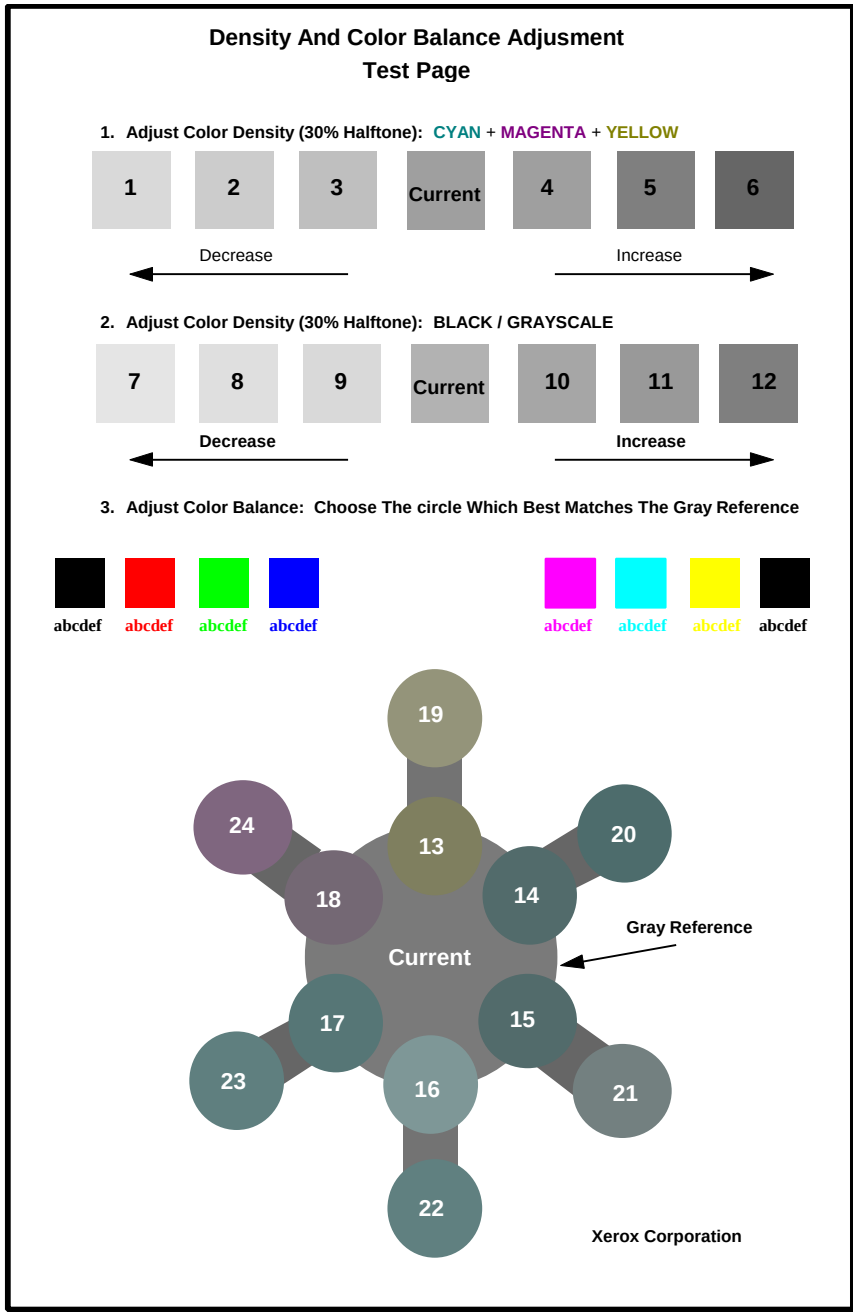
NC60 [Entry]

Press	Display Reads
Menu Up - until	Menus Color Adjust
Item Down	Processing . . .

This test pattern is used to set the density and to determine if the printer color is balanced properly. It will allow the customer to judge the color balance, and correct the color balance if necessary. Refer to ADJ. 3.1 Density and Color Balance Procedure in Section 4 for additional information.

*NOTE: It is often difficult to see changes in the color balance. You can check the change by running a printer diagnostic sheet before and after the adjustment. Changes will show in the values under **Density Rate Setpoints and Developer Bias**. The NC60 includes these values on the Density and Color Balance Test Pattern.*

On the NC60 only, you must disconnect all input ports on the ESS.



BOOT SEQUENCE: (C55/C55MP)

The following is the boot sequence for the C55/C55mp printers. The ESS also boots while the printer is booting.

IOT BOOT SEQUENCE

1. ROM Checksum.
2. RAM Checksum.
3. NVM Checksum.
4. All Sensors Checked for Paper.
5. Main Motor On.
6. Process Control Setup Begins.
7. Message Display indicates moving * during ESS Boot sequence.
8. When ESS Boot is complete Message display indicates INITIALIZING and all message display LEDs come on.

ESS BOOT SEQUENCE

1. ROM Checksum.
2. NVM Test.
3. Dram Test.
4. TIFF PWB Test.
5. Local Serial (SLIC) PWB Tested.
6. Font SIMM Test.
7. Network Interface Card Tested.
8. Floppy Test.
9. Hard Disk Test.
10. ESS PWB Communicates with PCU PWB, Message display indicates INITIALIZING and all message display LEDs come on.

IOT COPY QUALITY SETUP

1. Main Motor and Fuser Motor on.
2. Cleaner Solenoid energizes and Cleaner Assembly moves against Transfer Drum.
3. Black Developer Clutch energizes and Black toner concentration is checked. If necessary, the Black Toner Motor switches on and "tones up" the black developer.
4. Cyan Developer Clutch energizes and Cyan toner concentration is checked. If necessary, the Color Toner Motor and Cyan Toner Solenoid switch on and "tone up" the cyan developer.
5. Step 4 is repeated for Magenta and Yellow.
6. Main Motor pauses with white patch under Gamma Sensor and the Gamma Sensor is calibrated.
7. Three Black patches printed on top of white patch, 50 volts apart. Gamma sensor measures patches and sets Black developer bias.
8. Three Cyan patches printed 50 volts apart. Gamma sensor measures patches and sets Cyan developer bias.
9. Step 8 is repeated for Magenta and Yellow.
10. Repeat Steps 3, 4 and 5 to recheck toner concentration.

C55 ESS LED'S



CR5 lites when there is +5 VDC available on the ESS.

CR3 lites when the ESS passes Self Test.

All LED's lite when the ESS fails Self Test.

BOOT SEQUENCE: [NC60]

The following is the boot sequence for the NC60 printer. The ESS also boots while the printer is booting.

ESS BOOT SEQUENCE

1. Power and Fail LEDs on.
2. Fail LED off.
3. Boot 1 sequence begins.
   - Initialize i960 CPU.
   - Base RAM check (32 MB).
   - ROM Check.
   - ASIC & DMA Controller Check.
   - Parallel and Serial Port Check.
   - Message Display indicates:
   - **POWER ON VERSION n.nn**
   - Message display off.
   - All LED's on, all pixels on.
4. Boot 2 sequence begins.
   * displayed as tests are conducted.
   - Hard Disk Test.
   - SIMM 1 through SIMM 4 test.
   - XIE RAM test.
   - Optional NIC card slot test.
   - 10MB Ethernet test. (Internal NIC).
   - Option Flash ROM test.
   - Floppy Test.
   - DP-TEK test.
   - Memory test.
   - ESS Ready.

IOT BOOT SEQUENCE

1. ROM Checksum.
2. RAM Checksum.
3. NVM Checksum.
4. All Sensors Checked for Paper.
5. Main Motor On.
6. Process Control Setup Begins.
7. * Circles CCW during ESS Boot 1.
8. ESS Ready.

NC60 ESS LED'S



POWER



FAIL

The Power LED lites when there is +5 VDC available on the ESS.

The Fail LED lites when the ESS fails Self Test.

IOT COPY QUALITY SETUP

1. Main Motor and Fuser Motor on.
2. Cleaner Solenoid energizes and Cleaner Assembly moves against Transfer Drum.
3. Black Developer Clutch energizes and Black toner concentration is checked. If necessary, the Black Toner Motor switches on and "tones up" the black developer.
4. Cyan Developer Clutch energizes and Cyan toner concentration is checked. If necessary, the Color Toner Motor and Cyan Toner Solenoid switch on and "tone up" the cyan developer.
5. Step 4 is repeated for Magenta and Yellow.
6. Main Motor pauses with white patch under Gamma Sensor and the Gamma Sensor is calibrated.
7. Three Black patches printed on top of white patch, 50 volts apart. Gamma sensor measures patches and sets Black developer bias.
8. Three Cyan patches printed 50 volts apart. Gamma sensor measures patches and sets Cyan developer bias.
9. Step 8 is repeated for Magenta and Yellow.
10. Repeat Steps 3, 4 and 5 to recheck toner concentration.

GP 1 PRINT DRUM REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. (Figure 1): Grasp the two latches and open the Transfer Assembly.

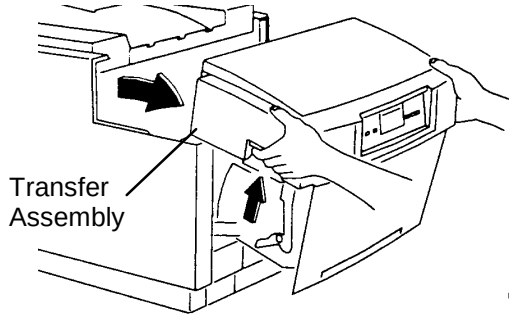


Figure 1. Opening the Transfer Assembly

2. (Figure 2): Release the latch and open the ROS.

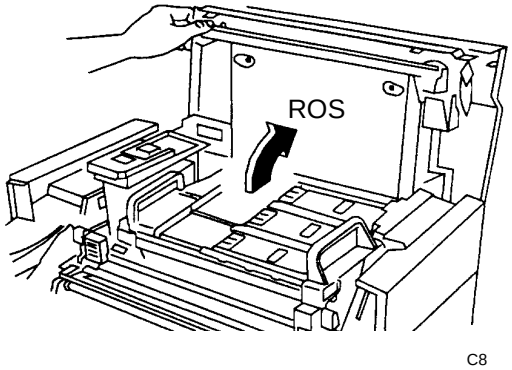


Figure 2. Opening the ROS

3. (Figure 3): Release the two green latches and slide the Print Drum module out of the printer.

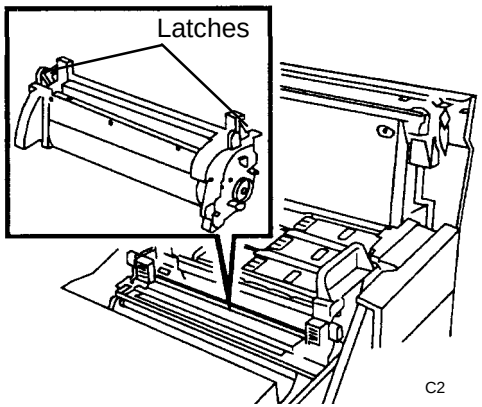


Figure 3. Print Drum Removal

GP 2 COLOR DEVELOPER REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the Print Drum (GP 1).
2. (Figure 1): Grasp the two handles, lift and remove the Color Developer module.

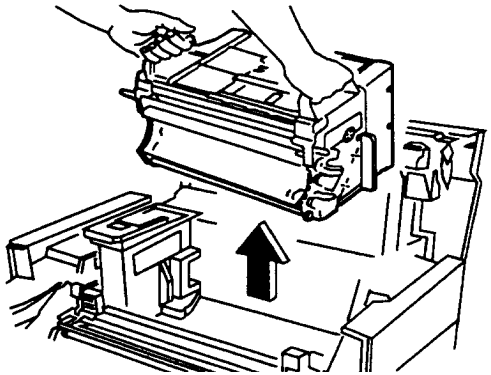


Figure 1. Color Developer Removal

GP 3 BLACK DEVELOPER REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. Remove the Print Drum Module(GP 1).
2. Remove the Color Developer Module GP 2).
3. (Figure 1): Release the latch and swing the Black Toner Hopper to the right.

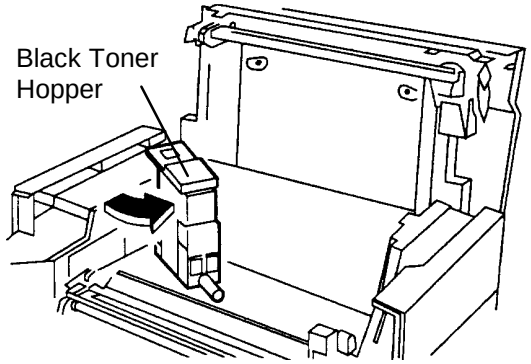


Figure 1. Moving the Black Toner Hopper

4. (Figure 2): Lift and remove the Black Developer Module.

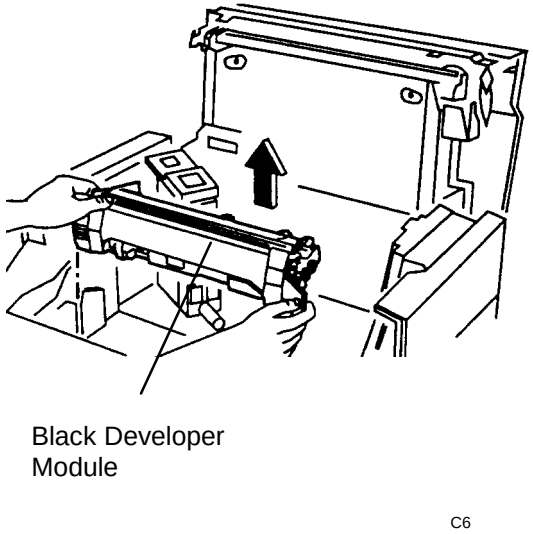


Figure 2. Removing the Black Developer Module

GP 4 TONER COLLECTOR REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. (Figure 1): Grasp the two latches and open the Transfer Assembly.

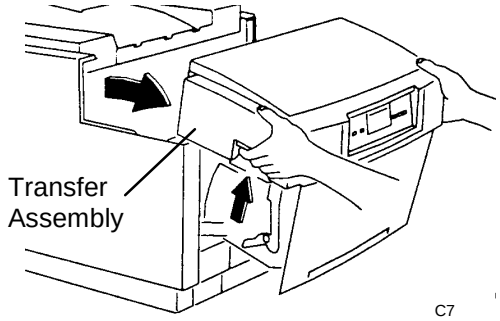


Figure 1. Opening the Transfer Assembly

2. (Figure 2): Lift and remove the Toner Collector.

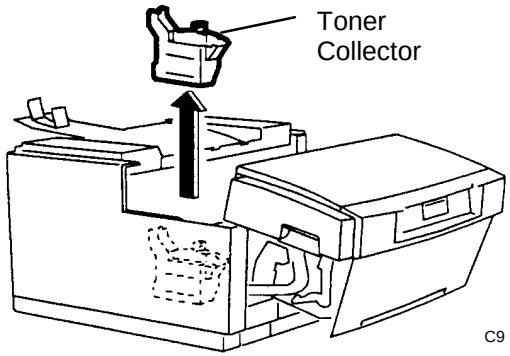


Figure 2. Removing the Toner Collector

GP 5 FUSER REMOVAL

WARNING

Switch the Main Power off and disconnect the Power Cord.

1. (Figure 1): Grasp the two latches and open the Transfer Assembly.

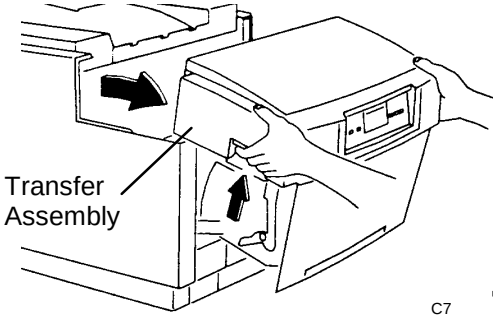


Figure 1. Opening the Transfer Assembly

2. (Figure 2): Release the Latch and open the Fuser Cover.

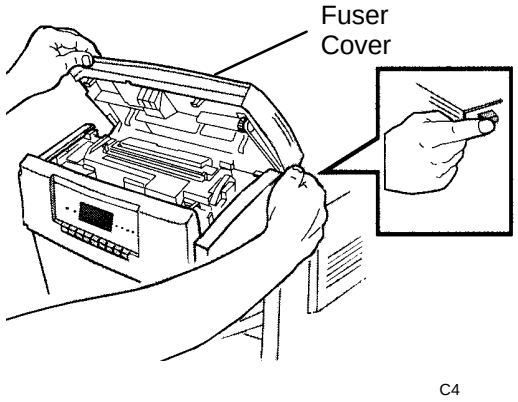


Figure 2. Opening the Fuser Cover

3. (Figure 3): Release the Latch Lever on the right side of the Fuser.
4. Lift and remove the Fuser Module.

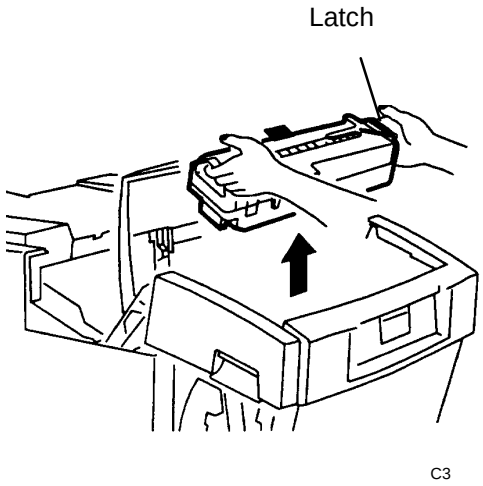


Figure 3. Removing the Fuser Module

NOTE: Be careful not to tilt the fuser.

GP 3.1 FUSER SPEED (C55/C55mp) (V66 FIRMWARE ONLY)

C55/C55mp Only

PURPOSE

NOTE: This adjustment only applies to IOT Firmware version 66.

The purpose of this adjustment is to set the speed of the Fuser to prevent the trail edge of the last color (Yellow or Black) from being misregistered or smeared.

ADJUSTMENT

1. Enter Normal Diagnostics (Press **Menu** & **Enter**, Power ON),
2. If the message display indicates,

PCU DIAG MODE 66

   continue with the adjustment. If the display indicates any version other than 66, exit from diagnostics, do not perform the adjustment.
3. With PCU DIAG MODE 66 displayed, press **On Line** then **Enter**. Release both keys at the same time.
4. The message display will indicate,

PCU DIAG SPECIAL

5. With PCU DIAG SPECIAL displayed, press **Medial Server** then **Previous**. Release both keys at the same time.
6. The message display will indicate,

DIAG BACK GROUND

7. Press **Menu** to scroll to:

CONTROL K DVBIAS

8. Use **Next**/**Previous** to scroll to:

CONTROL FS MOTOR

9. Press **Enter**. The display will indicate:

FS MOTOR 3729

10. Use **Next**/**Previous** to change the Fuser Motor speed to 3729.
11. To store the change actuate and hold the Bypass switch, (insert a piece of paper in the bypass slot) then press the **Form Feed** key. The ON Line LED will switch on and then off when the change is stored.
12. Exit from diagnostics by switching the printer off. Wait 10 seconds, then switch the printer on.

GP 3.2 CONTROL PATCH MD

PURPOSE

NOTE: This adjustment only applies to IOT Firmware version 75 and above.

C55/C55mp ESS Firmware version 3.5.2 and up and NC60 firmware includes this adjustment in the Service menu.

Refer to GP 3.2A for firmware version 75.

Refer to GP 3.2B for the (C55/C55mp) ESS version 3.5.2 and above adjustment.

Refer to GP 3.2C for the [NC60] adjustment.

The purpose of this adjustment is to switch the density patch toner check on and off. When this feature is on, the density is checked using development patches before a low toner condition is declared.

This setting should normally be left OFF if can cause EA Fault codes.

PROCEDURE

3.2A (C55/C55mp) IOT FIRMWARE VERSION 75

1. Enter Normal Diagnostics (Press **Menu** & **Enter**, Power ON),
2. If the message display indicates,

PCU DIAG MODE 75

   or higher, continue with the adjustment. If the display indicates any version lower than 75, exit from diagnostics, do not perform the adjustment.
3. With PCU DIAG MODE 75 displayed, press **On Line** then **Enter**. Release both keys at the same time.
4. The message display will indicate,

PCU DIAG SPECIAL

5. With PCU DIAG SPECIAL displayed, press **Medial Server** then **Previous**. Release both keys at the same time.
6. The message display will indicate,

DIAG BACK GROUND

7. Press **Menu** to scroll to:

CONTROL K DVBIAS

8. Use **Next**/**Previous** to scroll to:

CONTROL PATCH MD

9. Press **Enter**. The display will indicate:

OFF/ON

10. Use **Next**/**Previous** to change the setting to ON or OFF.
11. To store the change actuate and hold the Bypass switch, (insert a piece of paper in the bypass slot) then press the **Form Feed** key. The ON Line LED will switch on and then off when the change is stored.
12. Exit from diagnostics by switching the printer off. Wait 10 seconds, then switch the printer on.

GP 3.2B CONTROL PATCH (C55/C55mp) ADJUSTMENT USING SERVICE MENU (ESS FIRMWARE V3.5.2 AND UP)

1. Press **On Line** to enter the Off Line mode, then press **Menu**.
2. Press **Next** until SERVICE is displayed, then press **Enter**.
3. Press **Next** until ADJUSTMENTS is displayed, then press **Enter**.
4. Press **Next** until PATCH CONTROL is displayed, then press **Enter**.
5. Switch the PATCH CONTROL ON or OFF.

GP 3.2C CONTROL PATCH [NC60] ADJUSTMENT USING SERVICE MENU

1. Press **Menu Up** until Service is displayed.
2. Press **Item Down** until patch Control is displayed.
3. Press **Value Up** until the Patch control is ON or OFF, then press **Enter**.

GP 3.3 TRANSPARENCY MODE

PURPOSE

The purpose of this procedure is to optimize the Transfer Bias for transparencies. This procedure has been designed to address the following problems:

- Mistacking on the Transfer Drum (E6/E4 Jams).
- Transfer Breakdown (very high frequency, small diameter deletions.
- Fuser oil fingers/offset (2 - 5 mm wide x 5 - 50 mm long brighter areas on the transparency that resemble human fingers when projected.

Refer to GP 3.3A for the (C55/C55mp) Adjustment.

Refer to GP 3.3B for the [NC60] Adjustment.

GP 3.3A TRANSPARENCY MODE (C55/C55mp)

ADJUSTMENT

1. Press **On Line** to enter the Off Line mode, then press **Menu**.
2. Press **Next** until MEDIA is displayed, then press **Enter**.
3. Press **Next** until TRANSPARENCY is displayed, then press **Enter**.
4. Press **Next** until TRANSPARENCY MODE is displayed, then press **Enter**.
5. Six choices are available, they are:

Mode	Criteria
DEFAULT	This is the best setting for Xerox
NONE	This setting is used if you have configured the IOT using Hidden diagnostics.
1	This setting is best for minimizing E4/E6 Jams with maximum transparency brightness.
2	This setting is best for minimizing transfer breakdown with maximum transparency brightness.
3	This setting is best for minimizing E4/E6 Jams with minimum oil finger/offsetting defects.
4	This setting is best for minimizing transfer breakdown with minimum oil finger/offsetting defects.

6. Select the choice which best represents your situation and press **Enter**.

GP 3.3B TRANSPARENCY MODE [NC60]

PURPOSE

The purpose of this procedure is to optimize the Transfer Bias for transparencies. This procedure has been designed to address the following problems:

- Mistacking on the Transfer Drum (E6/E4 Jams).
- Transfer Breakdown (very high frequency, small diameter deletions.
- Fuser oil fingers/offset (2 - 5 mm wide x 5 - 50 mm long brighter areas on the transparency that resemble human fingers when projected.

ADJUSTMENT

1. Press **Menu Up** until Service is displayed.
2. Press **Item Down** until OHP Mode (Transparency) is displayed.
3. Press **Value Up** to display the current setting.
4. Six choices are available, they are:

Mode	Criteria
DEFAULT	This is the best setting for Xerox
NONE	This setting is used if you have configured the IOT using Hidden diagnostics.
1	This setting is best for minimizing E4/E6 Jams with maximum transparency brightness.
2	This setting is best for minimizing transfer breakdown with maximum transparency brightness.
3	This setting is best for minimizing E4/E6 Jams with minimum oil finger/offsetting defects.
4	This setting is best for minimizing transfer breakdown with minimum oil finger/offsetting defects.

5. Select the choice which best represents your situation and press **Enter**.

GP 3.4 DRUM CLEANING

PURPOSE

The purpose of this procedure is force the transfer drum to run cleaning cycles. This helps prevent deletions in high volume applications.

Refer to GP 3.4A for the (C55/C55mp).

Refer to GP 3.4B for the [NC60].

GP 3.4A DRUM CLEANING (C55/C55mp)

ADJUSTMENT

1. Press **On Line** to enter the Off Line mode, then press **Menu**.
2. Press **Next** until SERVICE is displayed, then press **Enter**.
3. Press **Next** until ADJUSTMENTS is displayed, then press **Enter**.
4. Press **Next** until CLEANING CYCLES is displayed, then press **Enter**.
5. The following choices are available
   - Never
   - 10 through 100
6. For high volume customers the recommended setting is 30 (transfer drum is cleaned every 30 Images)

GP 3.4A DRUM CLEANING [NC60]

ADJUSTMENT

1. Press **Menu Up** until Service is displayed.
2. Press **Item Down** until Cleaning Cycle is displayed.
3. Press **Value Up** to display the current setting.
4. The following choices are available
   - Never
   - 10 through 100
5. For high volume customers the recommended setting is 30 (transfer drum is cleaned every 30 Images)
6. Select the choice which best represents your situation and press **Enter**.

GP 3.5 RESET [NC60]

PURPOSE

NOTE: Before performing a reset, print a Configuration Sheet. ***Menu Up*** *to Service,* ***Item Down*** *to Config. Sheet, then press* ***Enter****.*

The purpose of this procedure is enable the Reset Menu. When this menu is available, you can perform the following.

- Reset the ESS to Factory Defaults.
- Reset the Network to Defaults.
- Reset the CRUs.
- Restart the Printer.
- Delete All pending jobs.
- Initialize the Hard Disk.
- Format the Hard Disk.

PROCEDURE

1. Enable the Reset Menu.
   a. Switch the Power Off.
   b. Press and hold **On Line** and **Enter**, then switch the power on**.**
   c. Continue to hold **On Line** and **Enter** until POWER ON VERSION X.XX is displayed, then release the keys.
2. Reset the Printer.
   a. Press **Menu Up** until the item to be reset is displayed.
   b. Press **Value Up** until Yes is displayed.
   c. Press **Form Feed**.
3. Have the customer use the Configuration Sheet to reset any lost values.

GP 9.1 CHARGE SCOROTRON CURRENT CHECK

PURPOSE

The purpose of this check is to ensure that the Charge Scorotron current is within specifications.

WARNING

Switch the Main Power off.

PROCEDURE

1. (Figure 1): Disconnect the charge wire (center, large red) from the right side of the printer.
2. Set up the multimeter to read –700 µA.
3. (Figure 1): Connect the meter between the wire removed in step 1 and the charge terminal on the right frame.
4. Enter Normal Diagnostics (**Menu [3]** + **Enter [7]**, Power ON).
5. Use **Menu [3]** to scroll to VOL TEST MAIN CH.

Caution
Check to ensure that the red meter lead is not contacting the frame.

6. Press **Form Feed [1]** to switch on the High Voltage Power Supply.
7. The current should be –700 +50 –20 µA.
8. Press **Media Server [2]** to switch the Power Supply off.

NOTE: Do not keep the power supply on any longer than necessary. The constant charge can fatigue the print drum.

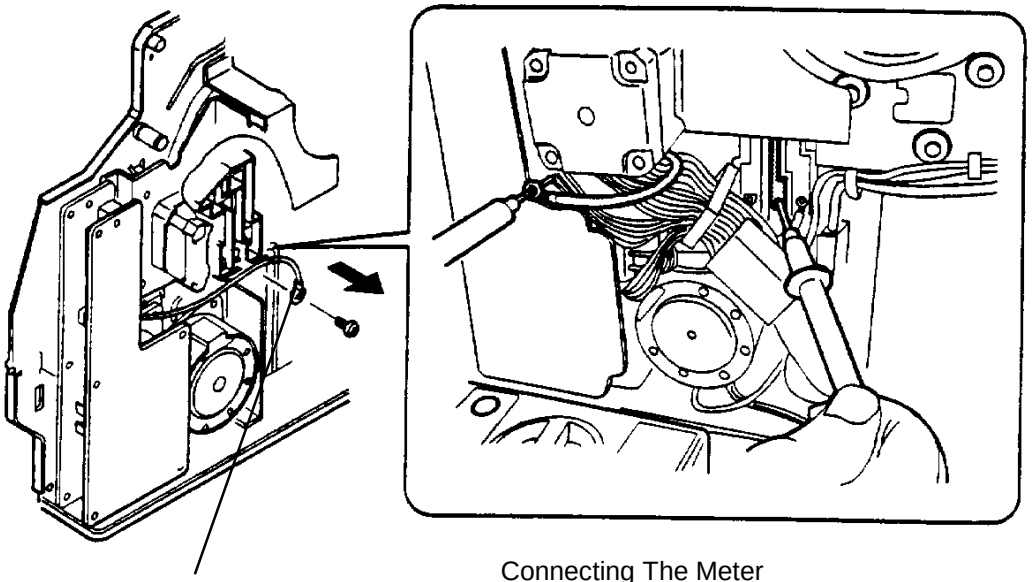


Figure 1. Checking the Charge Current

GP 9.2 CHARGE GRID VOLTAGE CHECK

PURPOSE

The purpose of this check is to ensure that the Grid Voltage is within specifications.

Note: During normal operation the Grid voltage will be one of three voltages –500, –600, –700.

PROCEDURE

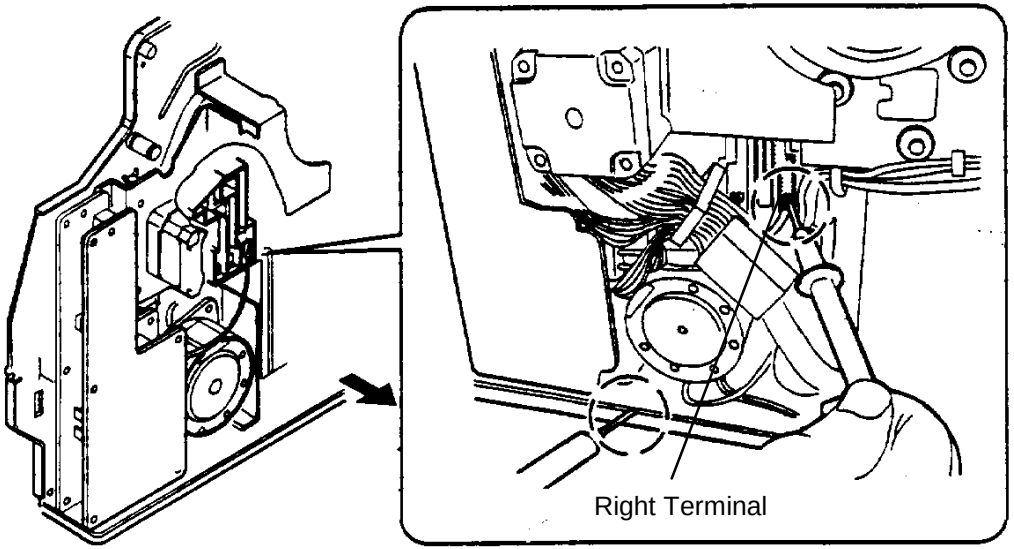
1. Set up the multimeter to read –700 VDC.
2. (Figure 1): Connect the meter to the Grid terminal (blue wire, right).
3. Enter Normal Diagnostics (**Menu [3]** + **Enter [7]**, Power ON).
4. Use **Menu [3]** to scroll to VOL TEST MAIN CH.

Caution

Check to ensure that the red meter lead is not contacting the frame.

5. Press **Form Feed [1]** to switch on the High Voltage Power Supply.
6. The voltage should be –557 ±7 V.
7. Press **Media Server [2]** to switch the Power Supply off.

NOTE: Do not keep the power supply on any longer than necessary. The constant charge can fatigue the print drum.



Connecting The Meter

K4

Figure 1. Checking the Grid Voltage

GP 9.3 TRANSFER VOLTAGE CHECK

PURPOSE

The purpose of this check is to ensure that the Transfer Voltage is within specifications.

NOTE: You must have a High Voltage Probe to perform this procedure

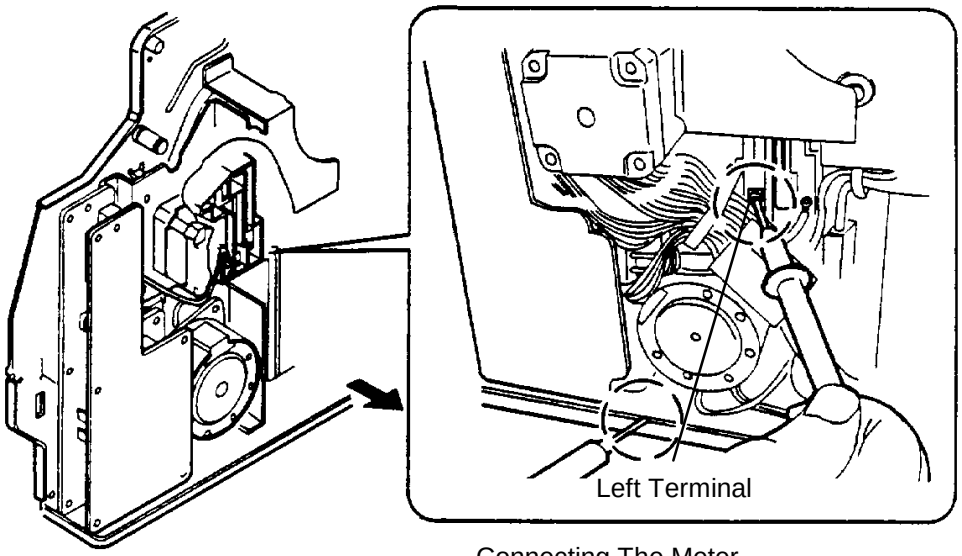
Note: During normal operation the Transfer voltage will be one of two voltages (1500 volts for plain paper, and 2800 for transparencies.

1. Set up the multimeter to read 1500 VDC.
2. (Figure 1): Connect the High Voltage Probe to the Transfer terminal (black wire, left).
3. Enter Normal Diagnostics (**Menu [3]** + **Enter [7]**, Power ON).
4. Use **Menu [3]** to scroll to VOL TEST MAIN CH.
5. Use **Next [6]**/**Previous [5]** to scroll to VOL TEST TC BIAS.

Caution
Check to ensure that the red meter lead is not contacting the frame.

6. Press **Form Feed [1]** to switch on the High Voltage Power Supply Transfer Current.
7. The voltage should be 1200 to 1600 V.
8. Press **Media Server [2]** to switch the Power Supply off.

NOTE: Do not keep the power supply on any longer than necessary.



Connecting The Meter

K7

Figure 1. Checking the Transfer Voltage

GP 9.4 DEVELOPER BIAS VOLTAGE CHECK

PURPOSE

The purpose of this check is to ensure that the Developer Bias Voltage is within specifications.

Note: During normal operation the Developer Bias voltage is determined by the Process Control Setup. It will be between –450 and -650 volts when the color is being developed.

1. Set up the multimeter to read 500 VDC.
2. Enter Normal Diagnostics (**Menu [3]** + **Enter [7]**, Power ON).
3. Use **Menu [3]** to scroll to VOL TEST MAIN CH.
4. Use **Next [6]**/**Previous [5]** to scroll to VOL TEST DV BIAS.
5. Press **Form Feed [1]** to switch on the High Voltage Power Supply Developer Bias.
6. (Figure 1): Connect the Meter to the Bias voltage to be checked.
7. The voltage should be – 400 ±50 V.
8. Press **Media Server [2]** to switch the Power Supply off.

NOTE: Do not keep the power supply on any longer than necessary.

NOTE: During print expect the voltage to be from – 250 to – 500 volts

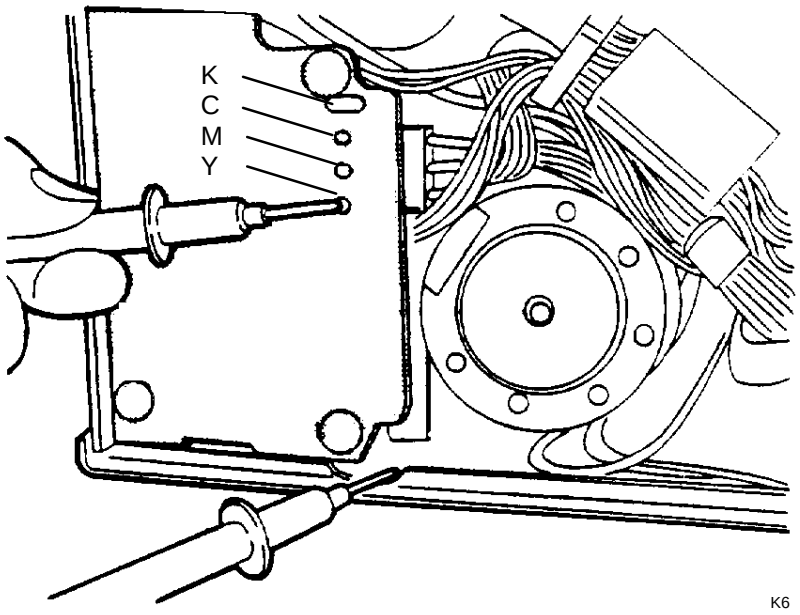


Figure 1. Checking the Developer Bias

NOTES:

GP 15.1 INSTALL

PROCEDURE

1. General Notes:

DO NOT connect the power cord to the printer until you are instructed to do so.

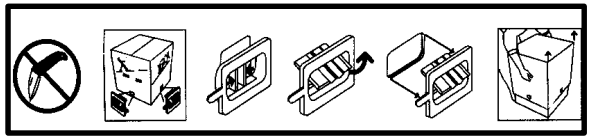
The Printer weighs approximately 89 pounds (40 Kg) without consumables. To avoid accidents, two people should lift the printer into place before installing.

If you need assistance with your installation, call your Dealer or contact:

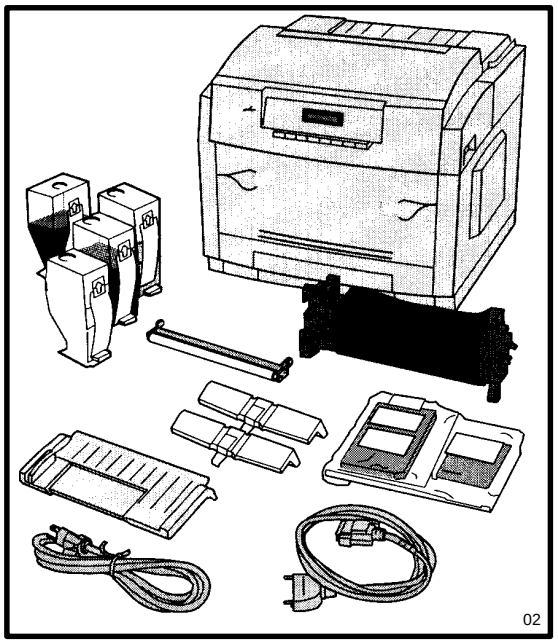
- Team XRX (US) 1-800-TeamXRX (1-800-832-6979
- Xerox National Call Center (Canada) 1-800-939-3769
- For all other countries please call your local Xerox Support.

2. Prepare for installation:

   a. Be sure to remove the outer box by removing the four clips as shown.



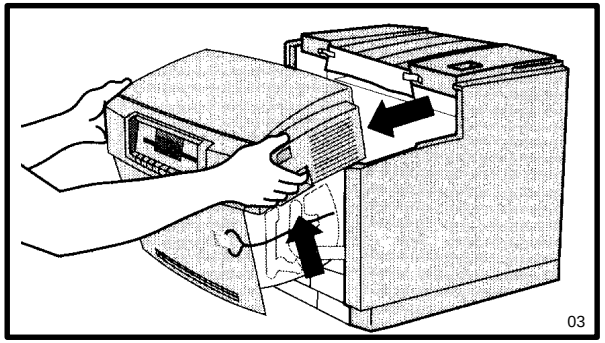
   b. Remove the packaging materials, printer, and consumables from the carton. Make sure that you have all the components shown in the illustration below.



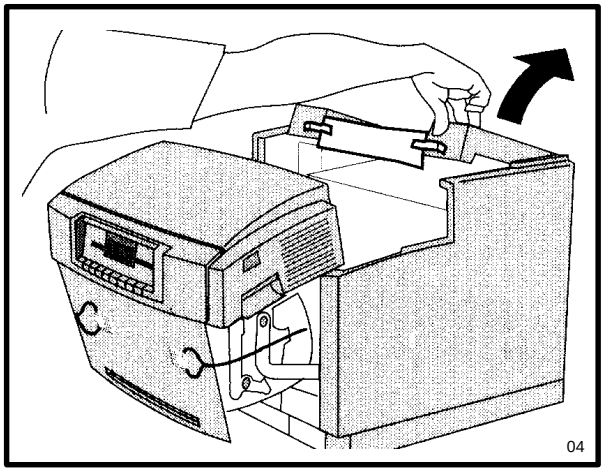
   c. Place the printer where it will be used. **TWO** people should lift the printer.

   d. Remove the tape from the printer exterior.

   e. Release the latches and open the front panel.

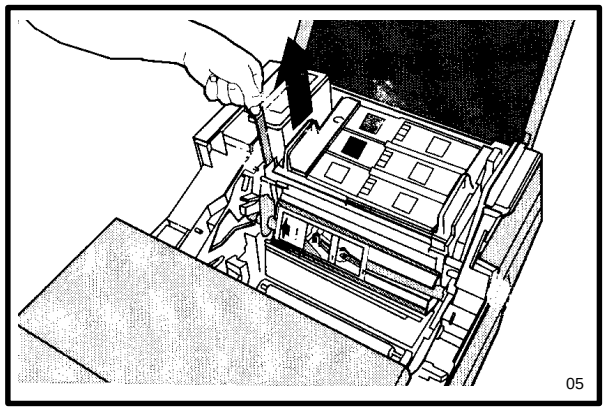


   f. Release the latch and open the rear panel. Remove the foam sheet.



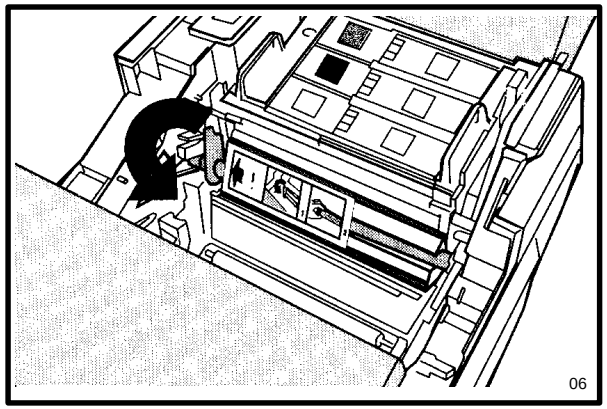
3. Remove interior packaging:

   a. Remove the tape by pulling straight up.

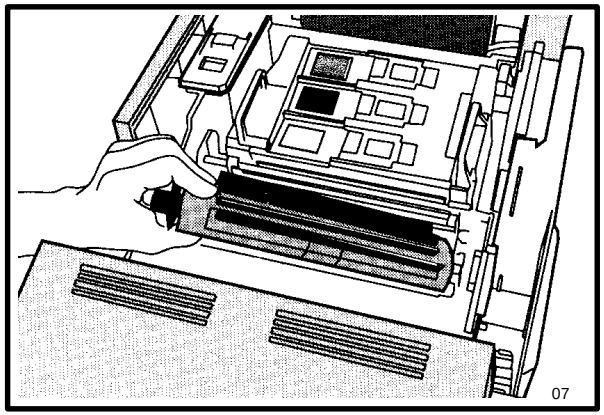


   b. Follow the next three steps completely to remove the developer packing.

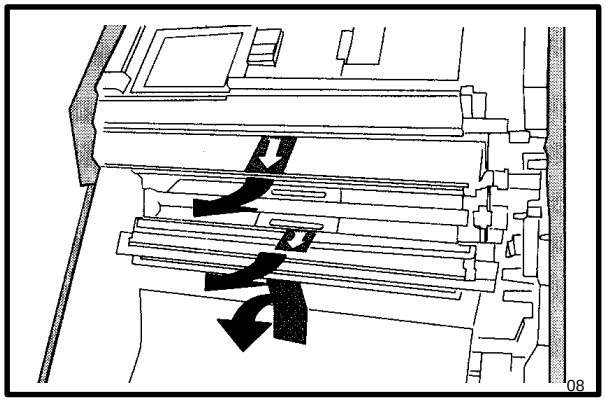
   c. Rotate the lever on the cardboard roller as shown until it releases. DO NOT remove any of the tape holding the roller to the foam



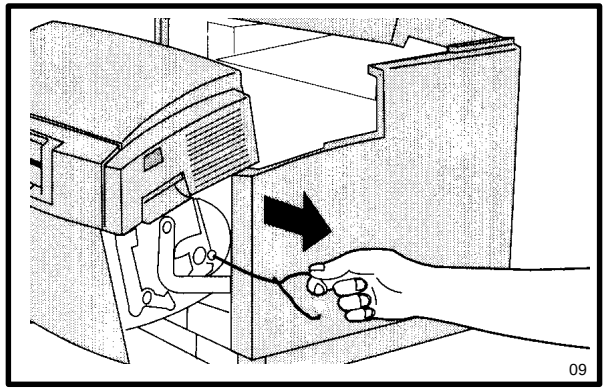
   d. Remove the roller and the foam cylinder, being sure to remove all FIVE seals attached to back of the foam cylinder.



   e. Remove the two plastic strips by pulling them as shown. Remove the foam sheet from the bottom of the printer as shown.

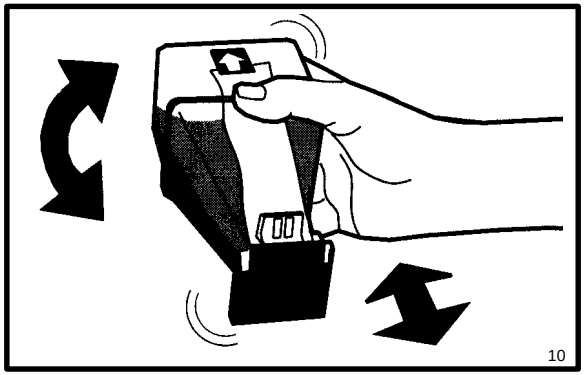


   f. Remove the two clips from the transfer drum by pulling on the strings taped to the front of your printer.

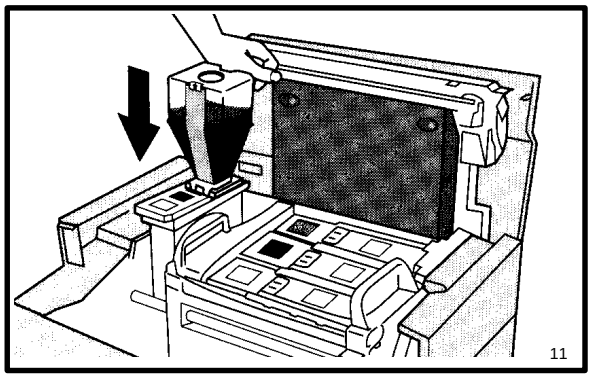


4. Load the Toner:

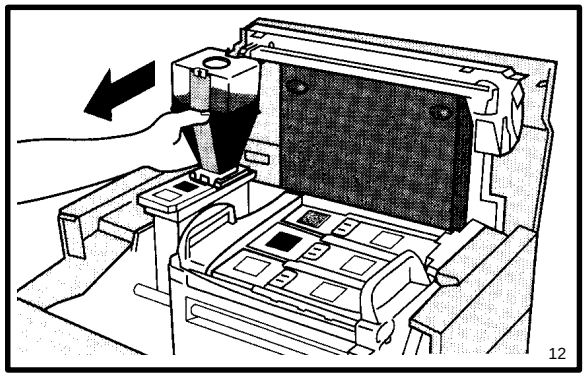
   a. **IMPORTANT!** Shake the black toner bottle vigorously. There is an internal paddle to aid in mixing the toner.



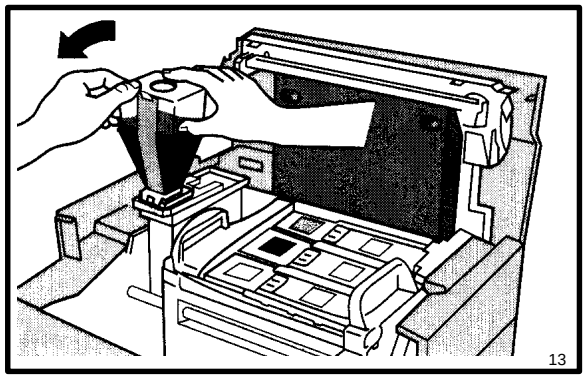
   b. Place the base of the toner bottle on the matching color-coded platform, fitting the hooks into the slots.



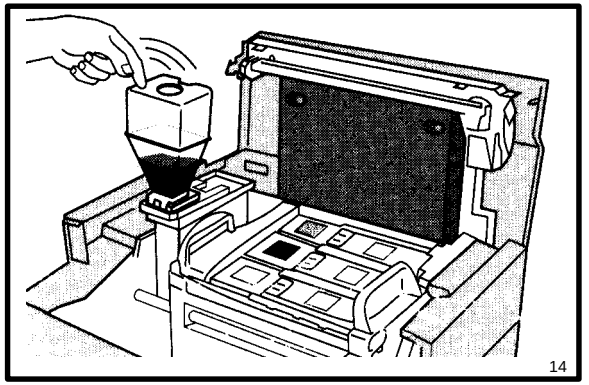
   c. Grasp the base of the toner bottle and pull it to the end of the slide.



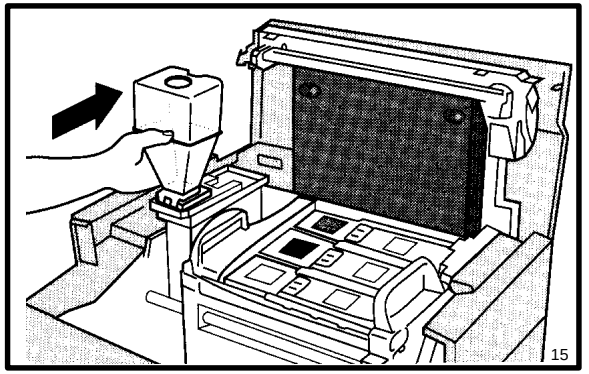
   d. Immediately remove the protective tape.



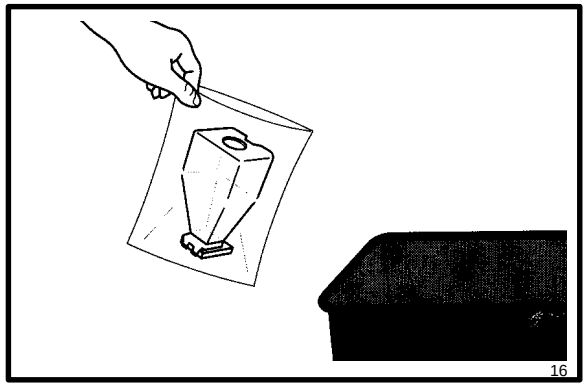
   e. Allow the toner to flow out of the bottle, then tap the bottle gently. **DO NOT SQUEEZE.**



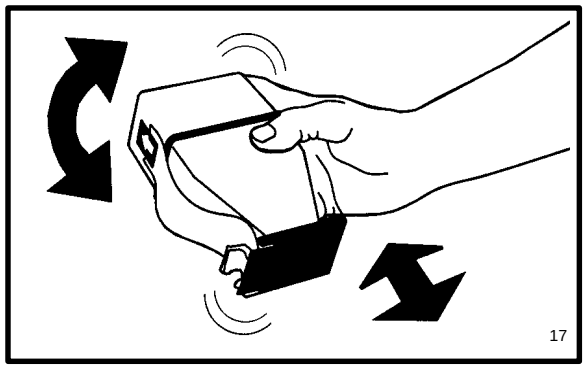
   f. When the bottle is empty, slide it back to the original insertion point and remove it.



g. Place the bottle into a supplied plastic bag, and dispose of it properly.

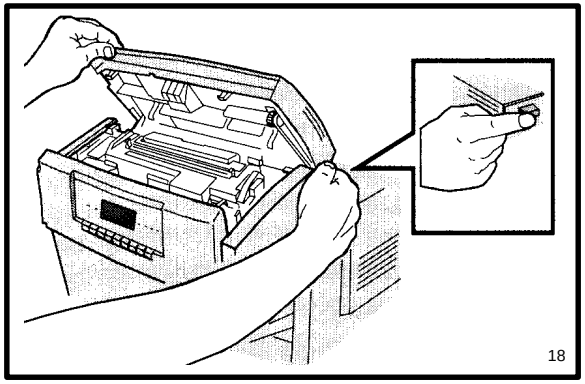


h. Repeat steps a through g for each of the 3 color toner bottles. Remember to shake vigorously and remove the tape as shown as soon the bottle is in place

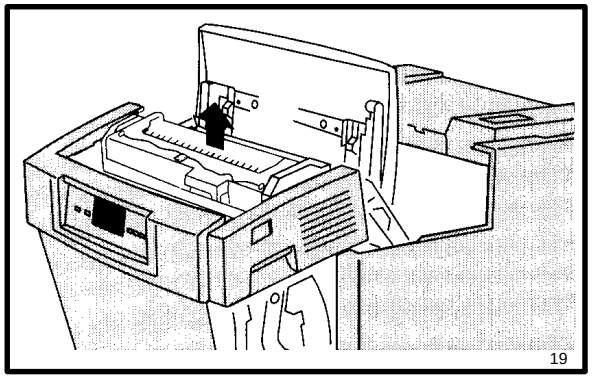


5. Install the Fuser components:

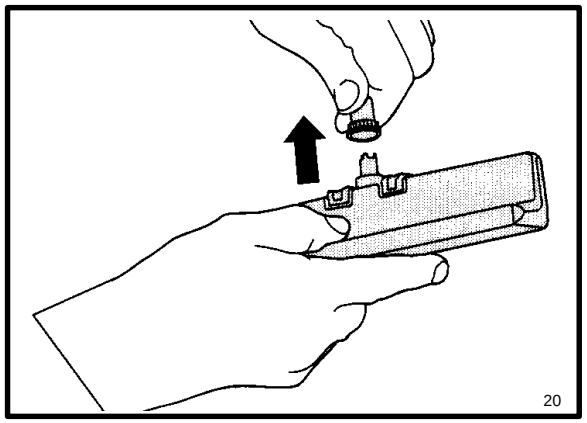
   a. Press the green release button located just behind the right side of the front cover to open the cover. This is where the fuser is located.



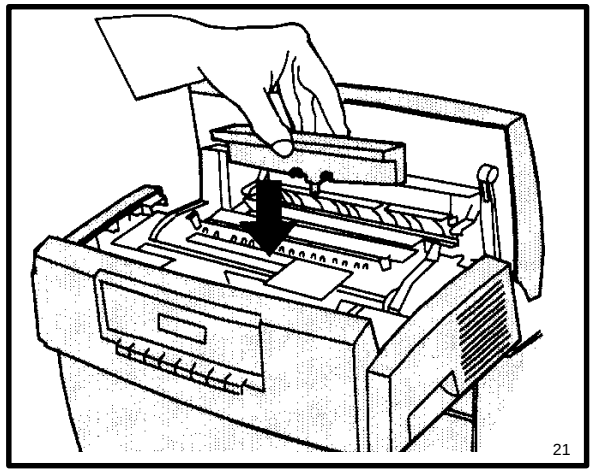
   b. Pull on the gold string to remove the gold plastic pins from the fuser.



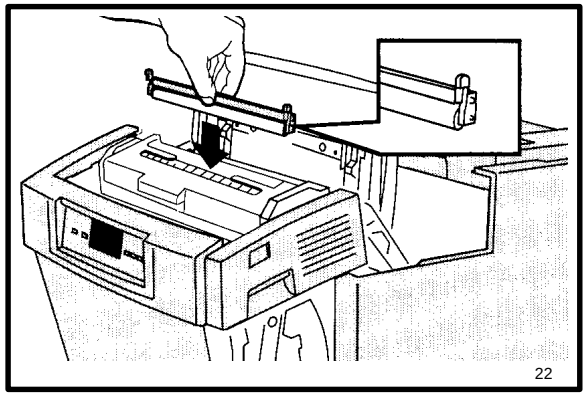
   c. Remove the Oil Bottle from the plastic bag and pull off the cap. Save the second oil bottle for use when the printer warns you that the oil is low.



   d. Insert the oil bottle into the top of the fuser and click into place.



   e. Remove the roller from the plastic bag, insert it into the top of the fuser, align the arrow on the roller to the arrow on the fuser and lock it in place by rotating toward you.

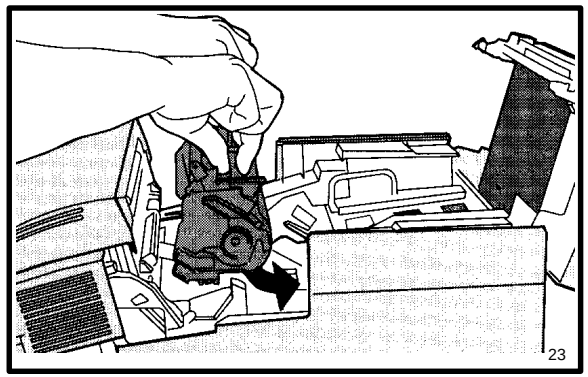


   f. Close the fuser top. If the top does not close easily, check to see if the cleaner roller is installed properly and locked in place.

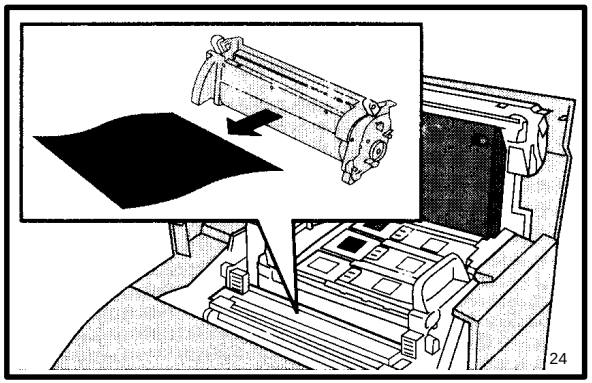
6. Install the Print Drum:

   a. Locate the Print Drum, the item wrapped in a foil bag.

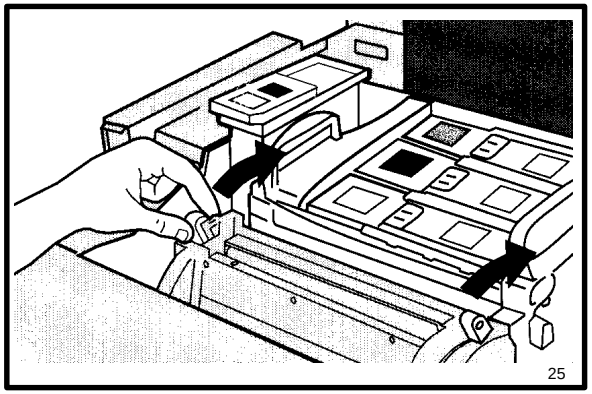
   b. Hold the drum by the gold color handles with the arrow near the handle pointing to the white arrow (#1) on the machine frame. Lower the Print Drum and slide forward to align with arrow #3. **DO NOT LOCK IN PLACE.**



   c. Be sure that you have **NOT LOCKED** the Print Drum or permanent damage will occur. Pull the tape marked with an arrow to remove the paper covering.



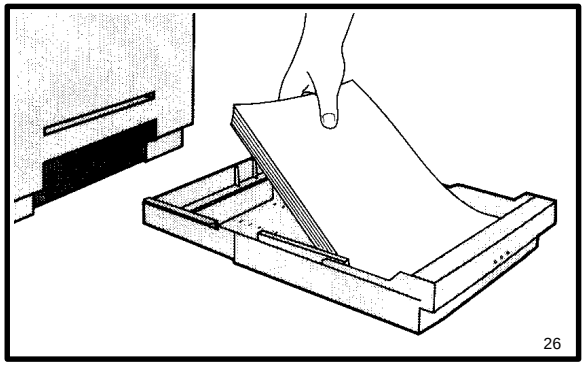
   d. Push both latches forward to lock the drum in place.



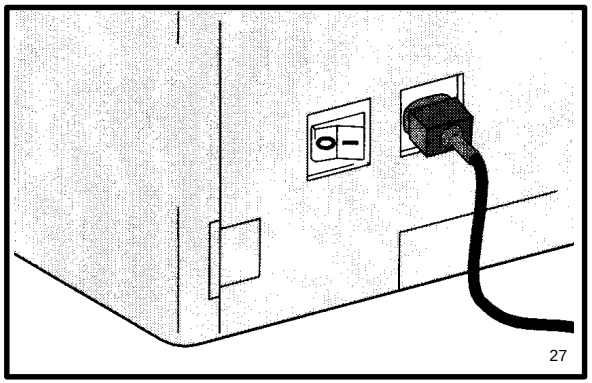
7. Print the test sheet:

   a. Close the front and the back printer panels. Install the Manual Feed Tray into the Manual Feed Slot on the Front Panel. (For details on how to use this tray, see Chapter 3 in the User's Guide.)

   b. Remove all tape from tray 1 and add paper.

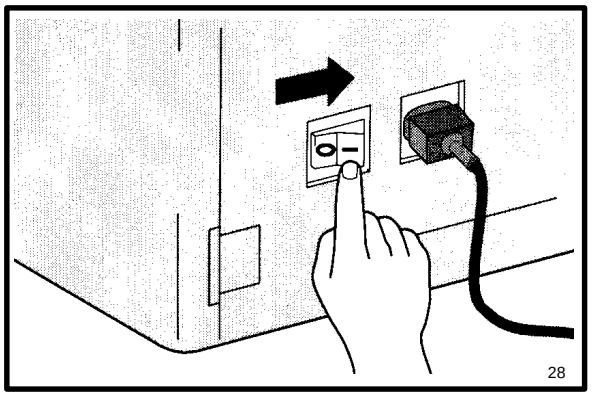


   c. Plug the power cord into the printer and power source.



   d. Switch the printer.

   e. The printer will adjust itself and print a test print. (For a new printer this takes about 10 minutes.)



UPDATING PRINTER/NIC SOFTWARE (C55/C55mp ONLY)

PURPOSE

To update the Network or the Printer software.

Updating the NIC software using CentreWare

Open "Xerox DocuPrint"

Open "CentreWare"

Select Tools, Upgrade Printer ...

Select Network, then select the software. It should have an .XFN extension.

Select OK.

Updating the Printer software using CentreWare

Open "Xerox DocuPrint"

Open "CentreWare"

Select Tools, Upgrade Printer ...

Select Printer, then select the software. It should have an .XFC extension.

Select OK.

Updating the NIC software using the Media Server

Insert the floppy containing the software, select the .XFN file and press **Enter**.

Updating the Printer or NIC software using DOS

If the (C55/C55mp) is configured as a parallel printer you can upload printer and NIC software from DOS.

For Printer upgrade, from the DOS prompt type:

Copy FILENAME.XFC:LPT#

For NIC upgrade, from the DOS prompt type:

Copy FILENAME.XFN:LPT#

is the printer LPT port.

The printer will recognize the files as software.

ENTERING SERIAL NUMBER/ SERVICE/SUPPLIES DATA USING CENTREWARE (C55/C55mp ONLY)

PURPOSE

To enter the printer serial number, service phone number and supplies phone number.

NOTE: If the printer is configured as a parallel printer, you cannot enter this data using CentreWare

Open "Xerox DocuPrint"

Open "CentreWare DP Services"

Select the appropriate Printer.

Select Printer, Properties, System...

In the System Properties window select the Support Tab.

Enter the required data.

Select OK.

ENTERING ALPHANUMERIC DATA USING THE CONTROL PANEL (C55/C55mp ONLY)

PURPOSE

To enter Alphanumeric data using the control panel.

1. Enter the Off Line mode.
2. Scroll to the location requiring the data entry.
3. Press **Select** to move the prompt to the right.
4. Press **Media Server** to move the prompt to the left.
5. The following alphanumerics are available:
   A ~ Z ☒ _ - 9 ~ 0
   ☒ will delete the prompt character and all characters to the right.
6. Use the **Next/Previous** keys to scroll through the characters.
7. Once the proper character is displayed use **Select** or **Media Server** to move the prompt and store the character.
8. When finished entering data, press **Enter**.

UPDATING PRINTER/NIC SOFTWARE [NC60] ONLY

PURPOSE

To update the Network or the Printer software.

Updating the NIC software using CentreWare

Open "Xerox DocuPrint"

Open "CentreWare"

Select Tools, Upgrade Printer ...

Select Network, then select the software. It should have an .XFN extension.

Select OK.

Updating the Printer software using CentreWare

Open "Xerox DocuPrint"

Open "CentreWare"

Select Tools, Upgrade Printer ...

Select Printer, then select the software. It should have an .XFC extension.

Select OK.

Updating the Printer or Optional NIC software using DOS

If the [NC60] is configured as a parallel printer you can upload printer and Optional NIC software from DOS.

For Printer upgrade, from the DOS prompt type:

Copy FILENAME.XFC:LPT#

For NIC upgrade, from the DOS prompt type:

Copy FILENAME.XFN:LPT#

is the printer LPT port.

The printer will recognize the files as software.

ENTERING SERIAL NUMBER/ SERVICE/SUPPLIES DATA USING CENTREWARE [NC60] ONLY

PURPOSE

To enter the printer serial number, service phone number and supplies phone number.

NOTE: If the printer is configured as a parallel printer, you cannot enter this data using CentreWare

Open "Xerox DocuPrint"

Open "CentreWare DP Services"

Select the appropriate Printer.

Select Printer, Properties, System...

In the System Properties window select the Support Tab.

Enter the required data.

Select OK.

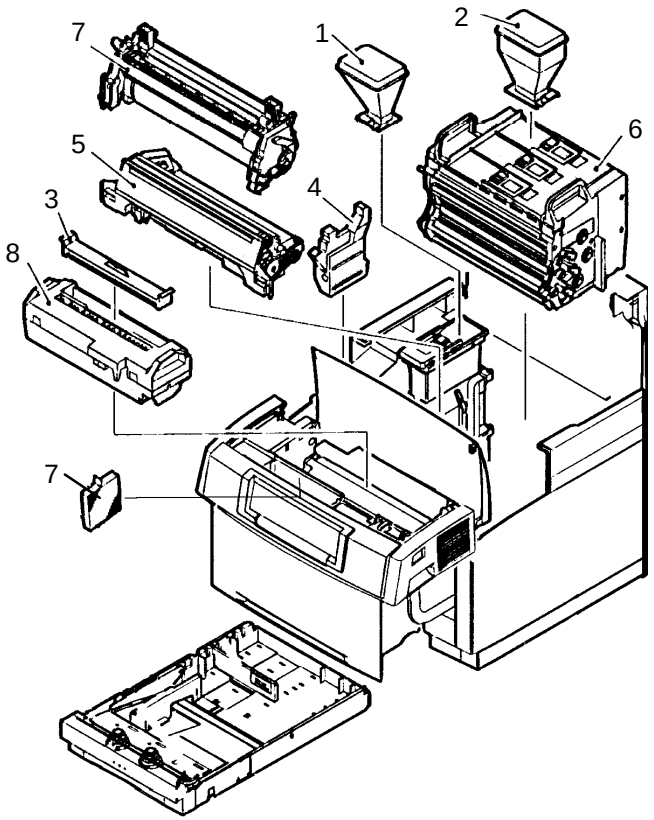
ENTERING ALPHANUMERIC DATA USING THE CONTROL PANEL [NC60] ONLY

PURPOSE

To enter Alphanumeric data using the control panel.

1. Scroll to the location requiring the data entry.
2. Press **Item Up** to move the prompt to the right.
3. Press **Item Down** to move the prompt to the left.
4. The following alphanumerics are available:
   A ~ Z _ - 9 ~ 0
5. Use the **Value Up/Value Down** keys to scroll through the characters.
6. Once the proper character is displayed use **Item Up** or **Item Down** to move the prompt to the next character.
7. When finished entering changes, press **Enter**.

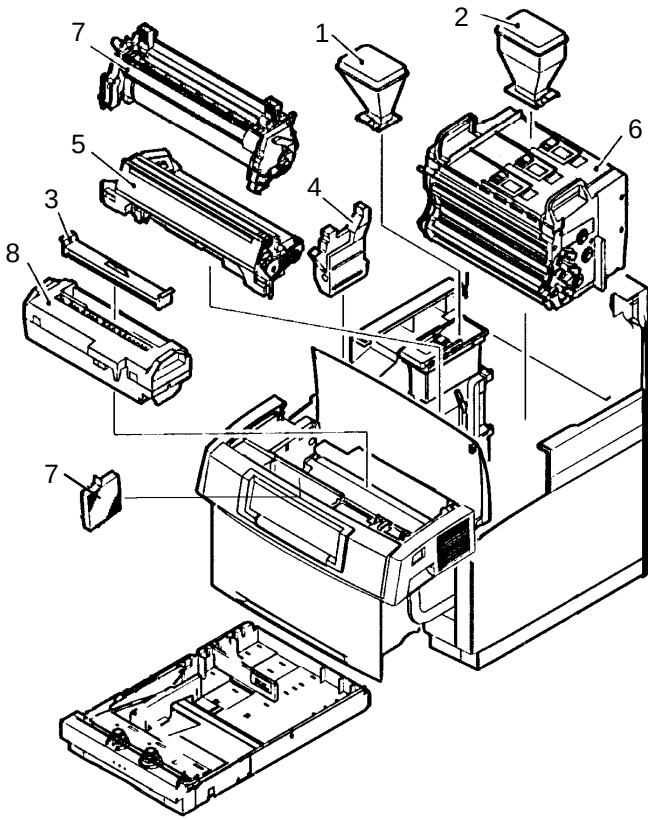
CONSUMABLES (C55/C55mp)



Consumables	XE Part No	US/XCL/ACO PART No	Life @ 5% Area Coverage
1 Black Toner	6R856	6R856	5000 Images
2 Cyan Toner	6R857	6R857	4000 Images
2 Magenta Toner	6R858	6R858	4000 Images
2 Yellow Toner	6R859	6R859	4000 Images
3 Fuser Oil Kit *	8R7724	8R7724	7000 Pages
4 Toner Collector	8R7759	8R7748	7000 Pages
Maintenance Items			
5 Black Developer	5R90226	5R605	50000 Images
6 Color Developer	5R90216	5R596	30000 Images
7 Print Drum & Ozone Filters	13R549	13R549	50000 Images
8 Fuser	8R7890	8R7889	60000 Prints

* The first oil bottle will fill the sump. Expect 5000 to 6500 pages on the first oil kit. The Kit includes 2 oil bottles and one wiper roller.

CONSUMABLES [NC60]



Consumables	XE Part No	US/XCL/ACO PART No	Life @ 5% Area Coverage
1 Black Toner	6R856	6R856	5000 Images
2 Cyan Toner	6R857	6R857	4000 Images
2 Magenta Toner	6R858	6R858	4000 Images
2 Yellow Toner	6R859	6R859	4000 Images
3 Fuser Oil Kit *	8R7724	8R7724	7000 Pages
4 Toner Collector	8R7759	8R7748	7000 Pages
Maintenance Items			
5 Black Developer	5R90228	5R621	50000 Images
6 Color Developer	5R90227	5R620	30000 Images
7 Print Drum & Ozone Filters	13R556	13R556	50000 Images
8 Fuser	8R7981	8R7642	60000 Prints

* The first oil bottle will fill the sump. Expect 5000 to 6500 pages on the first oil kit. The Kit includes 2 oil bottles and one wiper roller.

OPTIONAL KITS (C55/C55mp)

Optional Kits	XE Part No	US/XCL/ACO PART No
Adobe PostScript Kit	98S3042	98S3042
Lower Feeder	98S3035	98S3035
Universal Tray	98S3034	98S3034
Serial/LocalTalk Card Kit	98S3038	98S3038
Ethernet Card Kit	98S3036	98S3036
TokenRing Card Kit	98S3037	98S3037
Media Server Kit	98S3032	98S3032
Hard Drive (810 M)	98S3033	98S3033
Repack Kit	NA	600K62160
Memory SIMM's		
4 MB	97K15280	97K15280
8 MB	98S3039	98S3039
16 MB	97K15300	97K15300
32 MB	97K22330	97K22330

OPTIONAL KITS [NC60]

Optional Kits	XE Part No	US/XCL/ACO PART No
Lower Feeder	98S3035	98S3035
Universal Tray	98S3034	98S3034
Ethernet Card Kit (100 MB)	97S2189	97S2189
TokenRing Card Kit	97S2035	97S2035
Media Server Kit	98S3032	98S3032
Hard Drive (810 M)	98S4154	98S4154
Repack Kit	NA	600K62160
Memory SIMM's		
8 MB	97S02240	97S02240
16 MB	97S02241	97S02241
32 MB	97S02242	97S02242

PRODUCT CODES (C55/C55mp)

Product	Product Code
USCO/ACO 120V / 8A (C55)	D1V
XE 220 - 240V / 5A. (C55)	D2V
USCO/ACO 120V / 8A (C55mp)	D3V
XE 220 - 240V / 5A (C55mp)	D4V
ACO 220V - 240V / 5A (C55)	K4H
ACO 220 - 240V / 5A (C55mp)	K5H

PHYSICAL CHARACTERISTICS (C55/C55mp)

Dimension	English	Metric
Width	18.5 inches	470 MM
Height	16.5 inches	419 MM
Depth	16.5 inches	419 MM
Weight	Appx. 89 lbs.	Appx. 40 KG

CAPABILITIES (C55/C55mp)

Printing Speed, letter size

Black: 12 ppm.

Color: 3 ppm.

Warm-Up Time

180 seconds.

Resolution

600 × 600 × 1
with 24 MB of RAM.

With PostScript: Contone = 600 × 600 × 4
with 24 MB of RAM.

Paper Feed System

Cassette & Manual Feed.

Cassette Capacity = 250 sheets 20 lb. (80 gsm.) paper.

Tray 2 (Optional) = 250 sheets 20 lb. (80 gsm.) paper.

Print Media (throughput materials)

The sizes in **bold** typeface are detected automatically. One of the other sizes can be assigned using the Off Line Menus.

Inches	Metric
Letter (8.4×11)	**A4 (210×297 mm)**
Legal (8.5×14)	A5 (148×210 mm)
Executive (7.25×10.5)	B5 (176×250 mm)
Invoice (5.5×8.5)	SP. Folio (216×315 mm)
8×10	
8.5×13	

Paper Exit System

Face down on the top cover,
Capacity = 150 sheets.

Print Materials Information

For complete details see the User's Guide.

Material	Part Number/ Description	Comments
Paper	20 to 24 lb. (80 to 90 gsm.)	Best
Paper	16 to 24 lb. (60 to 90 gsm.)	Good
Paper	Less than 16 lb. (60 gsm.) or greater than 24 lb. (90 gsm.)	Not recommended
Transparency	3R4446 (8½ × 11 clear)	Best
Transparency	3R96002 Lot M (A4 clear)	Best

OTHER SPECIFICATIONS (C55/C55mp)

Electrical Power Requirements

OPCO	Power Requirements
USCO / XCL	115V 50/60 Hz., 15A
XE	220 - 240V, 50/60 Hz., 10 - 15A

Power Consumption

300 W Average / 1000 W Maximum

Environmental Operating Conditions.

Minimum:

50° F (10°C) at 15% relative humidity.

Maximum:

90° F (32°C) at 85% relative humidity.

Recommended:

63 to 81° F (17.5 to 27°C)
at 60% to 70% relative humidity.

Maximum Altitude:

6560 feet (2000M).

Sound Level

47 dbA Standby (Max.)

54 dbA Running (Max.)

PRODUCT CODES [NC60]

Product	Product Code
USCO/ACO 110-130V / 8A	CR0
XE 200 - 260V / 5A.	CR1
ACO 200V - 260V / 5A	CR2

PHYSICAL CHARACTERISTICS [NC60]

Dimension	English	Metric
Width	18.5 inches	470 MM
Height	16.5 inches	419 MM
Depth	16.5 inches	419 MM
Weight	Appx. 89 lbs.	Appx. 40 KG

CAPABILITIES [NC60]

Printing Speed, letter size

Black: 16 ppm.

Color: 3 ppm.

Warm-Up Time

180 seconds.

Resolution

600 × 600 × 1
with 64 MB of RAM.

With PostScript: Contone = 600 × 600 × 4
with 64 MB of RAM.

Paper Feed System

Cassette & Manual Feed.

Cassette Capacity = 250 sheets 20 lb. (80 gsm.) paper.

Tray 2 (Optional) = 250 sheets 20 lb. (80 gsm.) paper.

Print Media (throughput materials)

The sizes in **bold** typeface are detected automatically. One of the other sizes can be assigned using the Tray Menu.

Inches	Metric
Letter (8.4×11)	**A4 (210×297 mm)**
Legal (8.5×14)	A5 (148×210 mm)
Executive (7.25×10.5)	B5 (176×250 mm)
Invoice (5.5×8.5)	SP. Folio (216×315 mm)
8×10	
8.5×13	

Paper Exit System

Face down on the top cover,
Capacity = 150 sheets.

Print Materials Information

For complete details see the User's Guide.

Material	Part Number/ Description	Comments
Paper	20 to 24 lb. (80 to 90 gsm.)	Best
Paper	16 to 24 lb. (60 to 90 gsm.)	Good
Paper	Less than 16 lb. (60 gsm.) or greater than 24 lb. (90 gsm.)	Not recommended
Transparency	3R4446 (8½ × 11 clear)	Best
Transparency	3R96002 Lot M (A4 clear)	Best

OTHER SPECIFICATIONS [NC60]

Electrical Power Requirements

OPCO	Power Requirements
USCO / XCL	110 - 130V 50/60 Hz., 15A
XE	220 - 260V, 50/60 Hz., 10 - 15A

Power Consumption

300 W Average / 1000 W Maximum

Environmental Operating Conditions.

Minimum:

50° F (10°C) at 20% relative humidity.

Maximum:

90° F (32°C) at 85% relative humidity.

Recommended:

50 to 90°F (10 to 32°C)
at 20% to 85% relative humidity.

Maximum Altitude:

6560 feet (2000M).

Sound Level

32 dbA Standby (Max.)

52 dbA Running (Max.)

CONTROLLER SPECIFICATIONS (C55/C55mp)

AMD 29040 RISC processor, operating at 50/25 Mhz.

Memory

24 MB DRAM / 6 MB FLASH ROM Standard on C55/C55mp.

Upgradable to a maximum of 64 MB.

Printer Description Languages (PDL)

Standard on C55: PCL 5C (Optional Adobe PS II Upgrade).

Standard on C55mp: PCL 5C and Adobe PS II Coresident).

Resident Fonts

35 Type 1 (PostScript printers only).

35 Intellifonts (PCL 5C).

10 TrueType (PCL 5C).

Interfaces

Standard: IEEE 1284 parallel port compatibility, with ECP and Nibble Modes (Windows 95 Plug and Play Standard).

C55mp Standard with Ethernet Network Interface Card.

Optional: LocalTalk and Serial.

Optional: Ethernet/Token Ring.

CONTROLLER SPECIFICATIONS [NC60]

Intel i960 superscalar processor, operating at 66 Mhz.

Memory

64 MB DRAM / 8 MB FLASH ROM Standard on NC60.

Upgradable to a maximum of 128 MB.

Printer Description Languages (PDL)

Adobe PostScript 3.0 and PCL 5C coresident

Resident Fonts

35 Type 1 (PostScript only).

35 Intellifonts (PCL 5C).

10 TrueType (PCL 5C).

Interfaces

P1284 parallel port compatibility, with ECP and Nibble Modes (Windows 95 Plug and Play Standard).

Standard with Ethernet 10MB Network Interface.

Optional: Ethernet 100MB

Optional: Token Ring.

TOOLS

Table 1, Standard Tools

Description	Part Number
Basic Tool Kit	600T1835
Metric Tool Kit	600T1880
Multimeter	600T1616
Lead Kit	600T1923

Table 2, Unique Tools

Description	Part Number
5.5 MM Magnetic Socket Driver	600T1123
Mag tip “+ Screw” Xcelite Drive Insert	600T1989
Optics Blue Cloth (lint free cleaning cloth)	499T90417
1.5 MM Hex Key Wrench	600T41107

Table 3, Supplies

Description	Part Number
Drop Cloth	35P1737
Cotton Swabs	35P2137
Clean Ups	43P67
Lint Free Tissues	35P2163

CHANGE TAG INDEX (C55/C55mp)

INTRODUCTION

Modifications to the printer are identified by a tag number which is recorded on a tag matrix card. There are two tag matrix cards. One is inside the ESS PWB cover and indicates the Systems Configuration. The second card, the IOT TAG Matrix, is attached to the printer frame, on the inside of the left rear side (viewed from the printer front).

CLASSIFICATION CODES

A tag number may be required to identify differences between parts that cannot be interchanged or differences in diagnostic repair, installation, or adjustment procedures. A tag number may also re required to identify the presence of optional hardware, special non-volatile memory programming, or whether mandatory modifications have been installed. Each tag number is given a classification code to identify the type of change that the tag has made. The classification codes and their descriptions are listed in the table below.

Classification Code	Description
M	Mandatory Tag.
N	Tag not installed in the field.
O	Optional Tag.
R	Repair Tag.

TAG 1:

DESCRIPTION: IOT was upgraded to PCU Firmware Version 66. This upgrade was performed during final integration in the US

CLASS: NA

USE:

MFG SERIAL NUMBERS:

NAME: IOT Firmware

PURPOSE: Firmware upgrade

KIT NUMBER: None

REFERENCE:

TAG 2:

DESCRIPTION: IOT was upgraded to PCU Firmware Version 66 at the manufacturing site.

CLASS: NA

USE:

MFG SERIAL NUMBERS:

NAME: IOT Firmware

PURPOSE: Firmware upgrade

KIT NUMBER: None

REFERENCE:

TAG 3:

DESCRIPTION: PCU and ESS PWBs modified to allow CISPR B certification in Rank Xerox. ESS also upgraded to optimize memory timing.

CLASS: NA

USE:

MFG SERIAL NUMBERS:

NAME: ESS and IOT Firmware

PURPOSE: Firmware upgrade to allow CISPR B certification in Rank Xerox

KIT NUMBER: None

REFERENCE:

TAG 4:

DESCRIPTION: Seals added to black toner hopper to prevent toner leakage during initial loading.

CLASS: NA

USE:

MFG SERIAL NUMBERS:

NAME: Black Toner Hopper

PURPOSE: Seals added to prevent toner leakage

KIT NUMBER: None

REFERENCE:

TAG 5:

DESCRIPTION: IOT was upgraded to PCU Firmware Version 75 at the manufacturing site. E-Prom soldered to PCU PWB.

CLASS: NA

USE:

MFG SERIAL NUMBERS:

NAME: IOT Firmware

PURPOSE: Firmware upgrade

KIT NUMBER: None

REFERENCE:

TAG 6:

DESCRIPTION: Field upgrade of IOT PCU Firmware Version 75. E-Prom soldered to PCU PWB.

CLASS: NA

USE:

MFG SERIAL NUMBERS:

NAME: IOT Firmware

PURPOSE: Firmware upgrade

KIT NUMBER: None

REFERENCE:

TAG 7:

DESCRIPTION: Strip of aluminum tape added to Waste Toner bottle Assembly to aid in recognition of full toner bottle.

CLASS: NA

USE:

MFG SERIAL NUMBERS:

NAME: Waste Toner Change

PURPOSE: To aid in recognizing full bottle.

KIT NUMBER: None

REFERENCE:

NOTES:

CHANGE TAG INDEX [NC60]

INTRODUCTION

Modifications to the printer are identified by a tag number which is recorded on a tag matrix card. There are two tag matrix cards. One is inside the ESS PWB cover and indicates the Systems Configuration. The second card, the IOT TAG Matrix, is attached to the printer frame, on the inside of the left rear side (viewed from the printer front).

CLASSIFICATION CODES

A tag number may be required to identify differences between parts that cannot be interchanged or differences in diagnostic repair, installation, or adjustment procedures. A tag number may also re required to identify the presence of optional hardware, special non-volatile memory programming, or whether mandatory modifications have been installed. Each tag number is given a classification code to identify the type of change that the tag has made. The classification codes and their descriptions are listed in the table below.

Classification Code	Description
M	Mandatory Tag.
N	Tag not installed in the field.
O	Optional Tag.
R	Repair Tag.

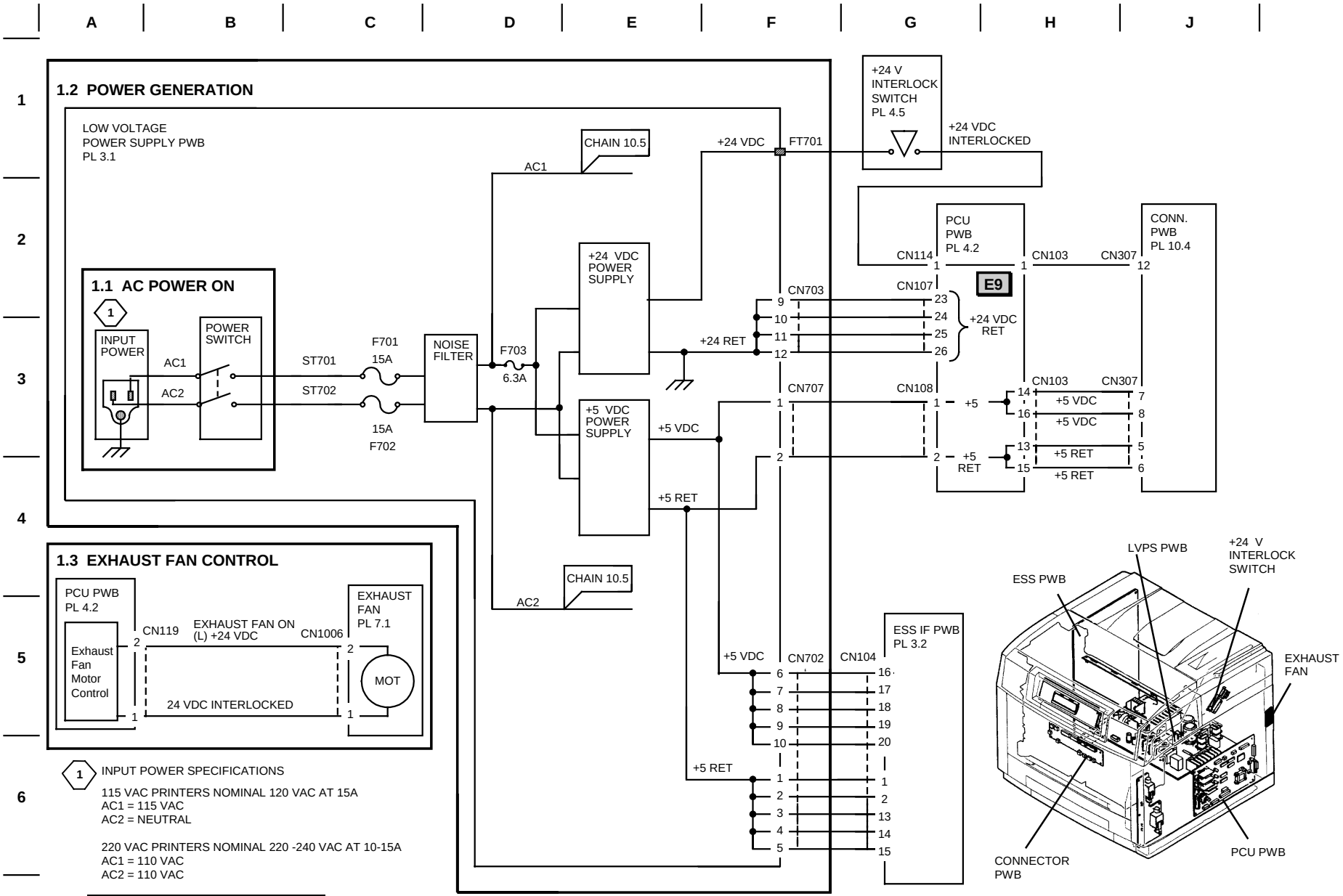
NOTES:

7. WIRING DATA

TITLE	PAGE
Chain 1 BSD, Standby Power	7-2
Chain 2 BSD, Mode Selection	7-3
Chain 3 BSD, Run Control	7-4
Chain 6 BSD, Laser Scanning	7-5
Chain 7 BSD, Paper Feed	7-6
Chain 7 BSD, T2 Optional Paper Feed	7-7
Chain 8 BSD, Registration	7-8
Chain 9 BSD, Xerographics	
High Voltage Power Supply	7-9
Drum Detection, Main Drive, Charge	7-10
Developer Drive, Mag. Roll Cleaning	7-11
Black Development, Black Toner Disp	7-12
Color Development	7-13
Color Toner Disp	7-14
Transfer, Transfer Drum Positioning, Transfer Cleaning, Transfer Discharge	7-15
Stripper Control, Transparency Jam, Cleaner Jam	7-16
Process Control	7-17
Erase Lamp, Waste Toner Sump	7-18
Chain 10 BSD, Fusing	
Fuser Drive, Exit Sensing, Exhaust Fan, Oil Sensing	7-19
Fuser Heat	7-20
Chain 13 BSD Accessories	
Hard Drive Floppy Drive	7-21

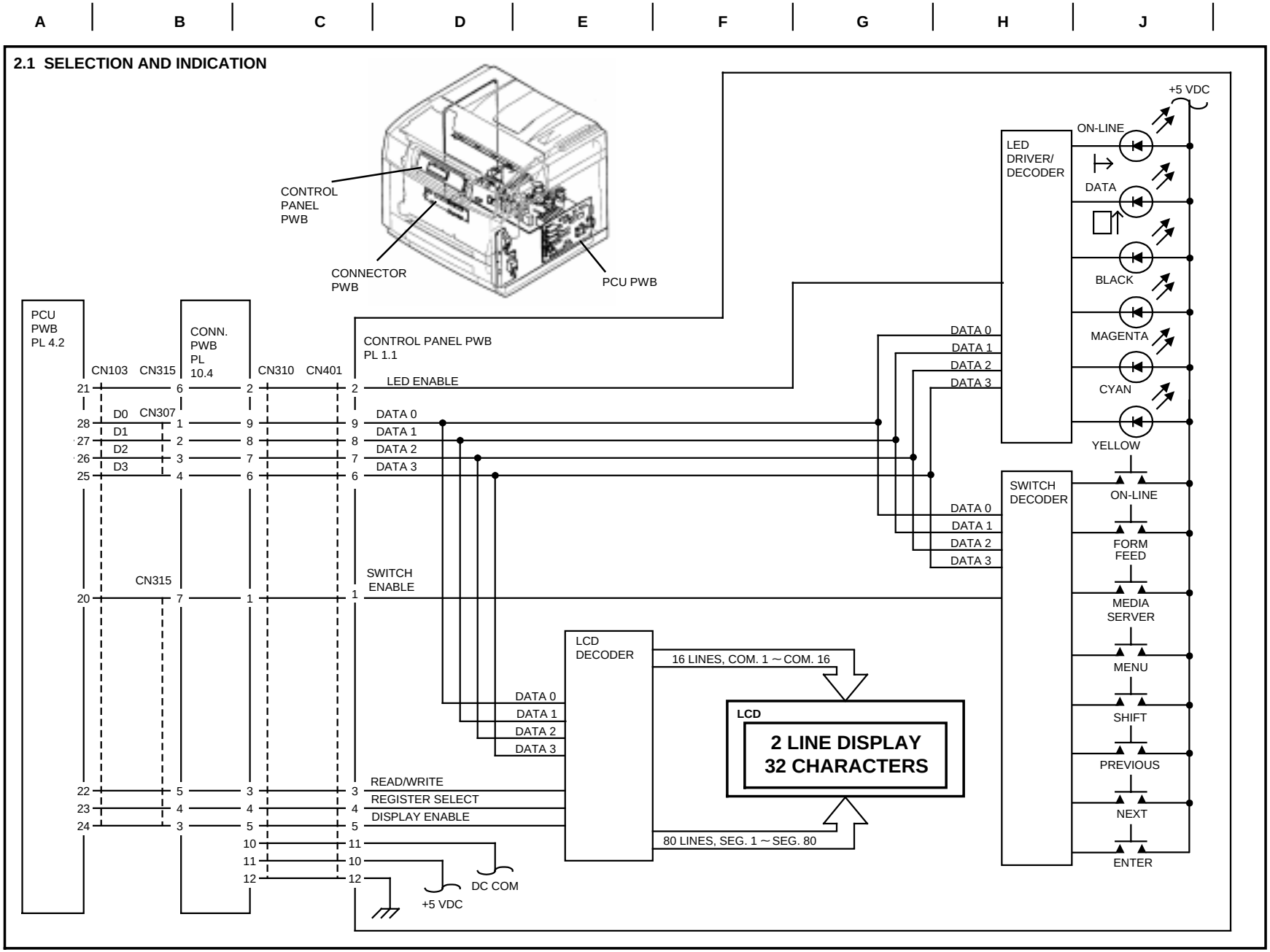
TITLE	PAGE
PCU PWB Connectors	7-22
Connector PWB Connectors	7-24
HVPS PWB Connectors	7-25
LVPS PWB, Cassette PWB Connectors	7-26
(C55/C55mp) ESS PWB Connectors	7-27
[NC60] ESS PWB Connectors	7-28

Connector Numbers	Location	Figure
CN100's	PCU PWB/ESS PWB	7-1
CN200's	Cassette PWB	7-4
CN300's	Connector PWB	7-2
CN400's	Control Panel PWB	7-2
CN700's	LVPS PWB	7-2
CN800's	HVPS PWB	7-3

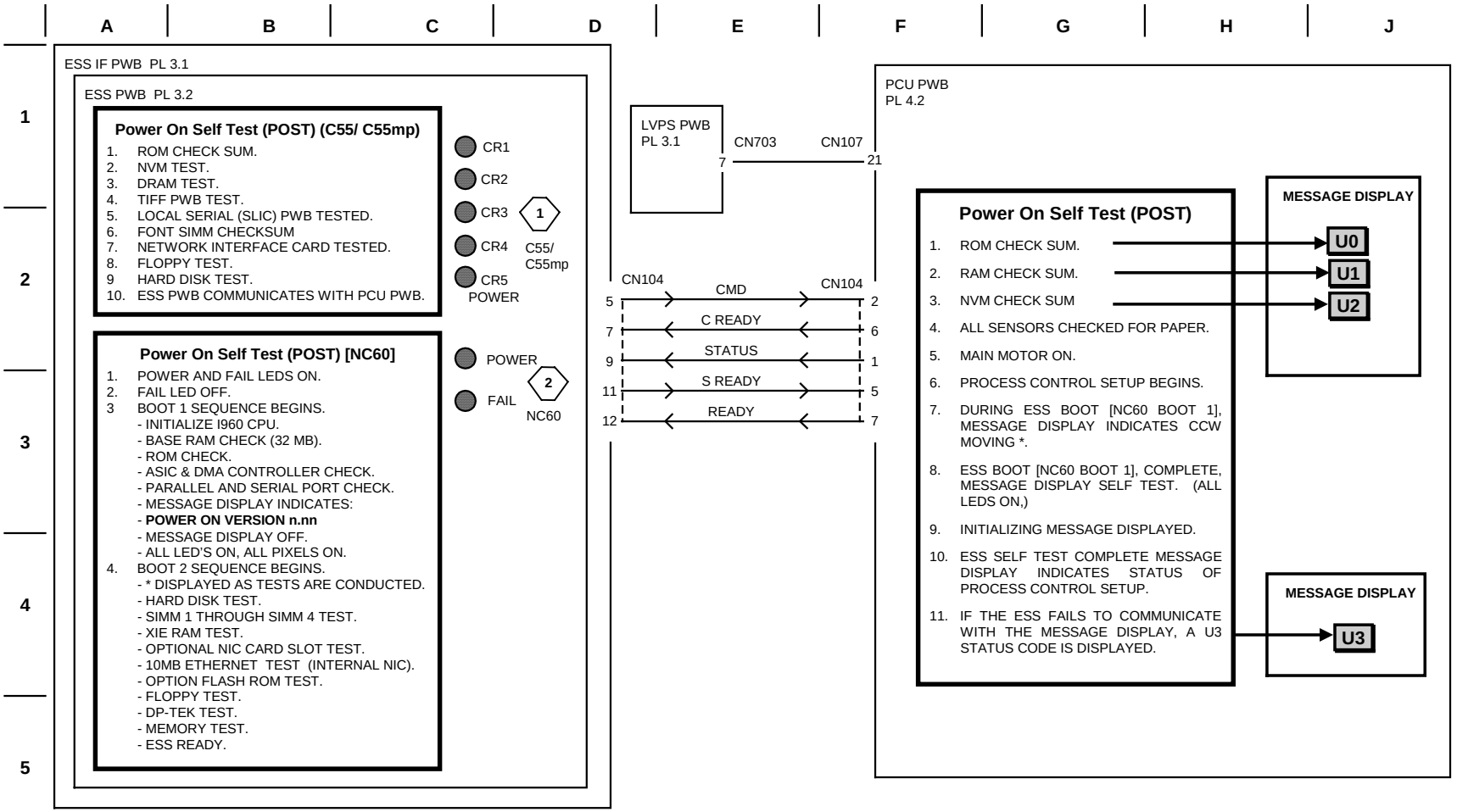


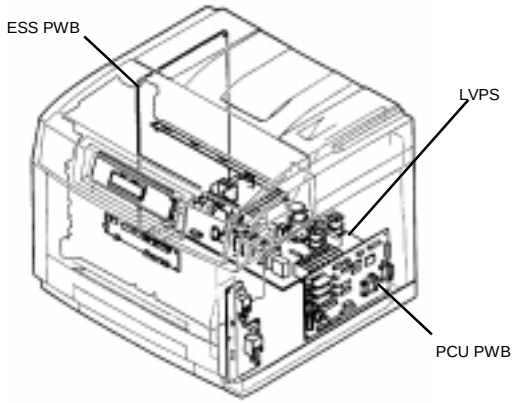
Status Codes	Description
E9	The +24 VDC Interlock is open.

STANDBY POWER
CHAIN 1 LEVEL 2
SHEET 1 0F 1



MODE SELECTION
CHAIN 2 LEVEL 2
SHEET 1 0F 1



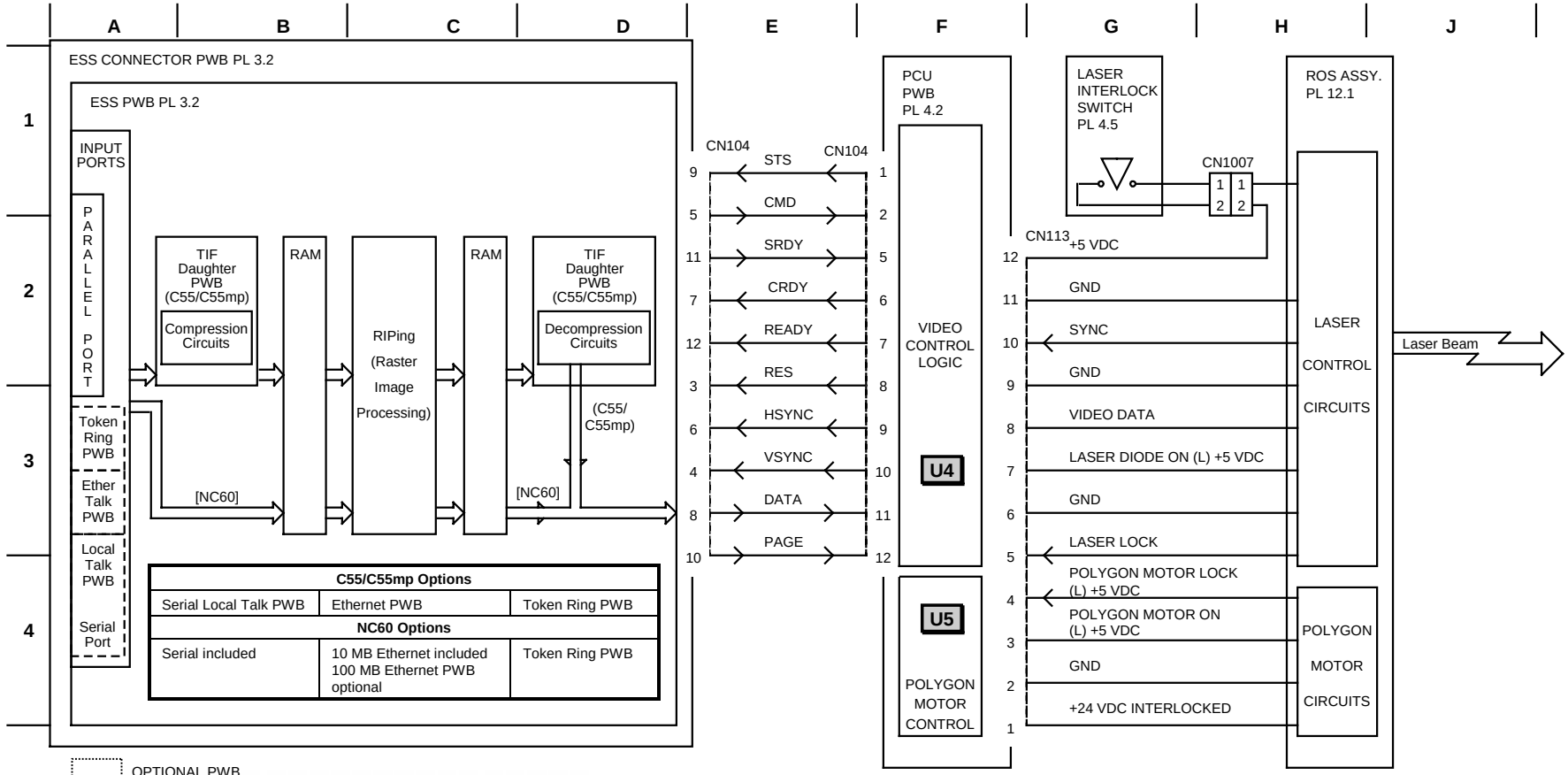


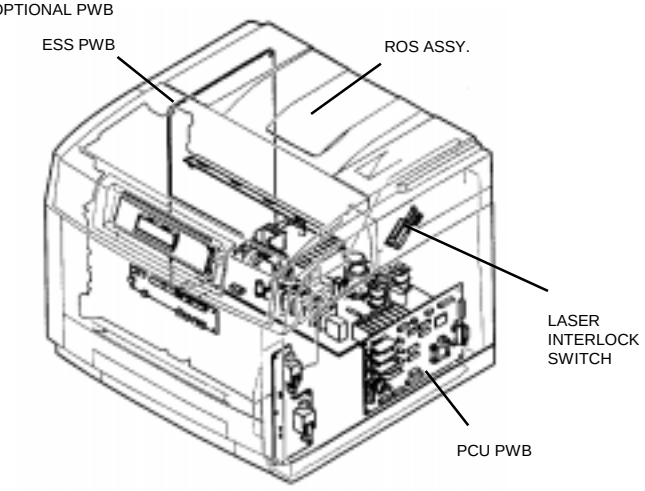
1 **(C55/C55mp)**
CR5 LITES WHEN THERE IS +5 VDC AVAILABLE ON THE ESS.
CR3 LITES WHEN THE ESS PASSES SELF TEST.
ALL LEDS LIGHT WHEN THE ESS FAILS SELF TEST.

2 **[NC60]**
THE POWER LED LITES WHEN THERE IS +5 VDC AVAILABLE ON THE ESS.
THE FAIL LED LITES IF THE ESS FAILS SELF TEST.

Status Codes	Description
U0	PCU ROM check sum failure.
U1	PCU RAM check sum failure.
U2	NVM RAM check sum failure.
U3	Communication failure.

RUN CONTROL
CHAIN 3 LEVEL 2
SHEET 1 0F 1

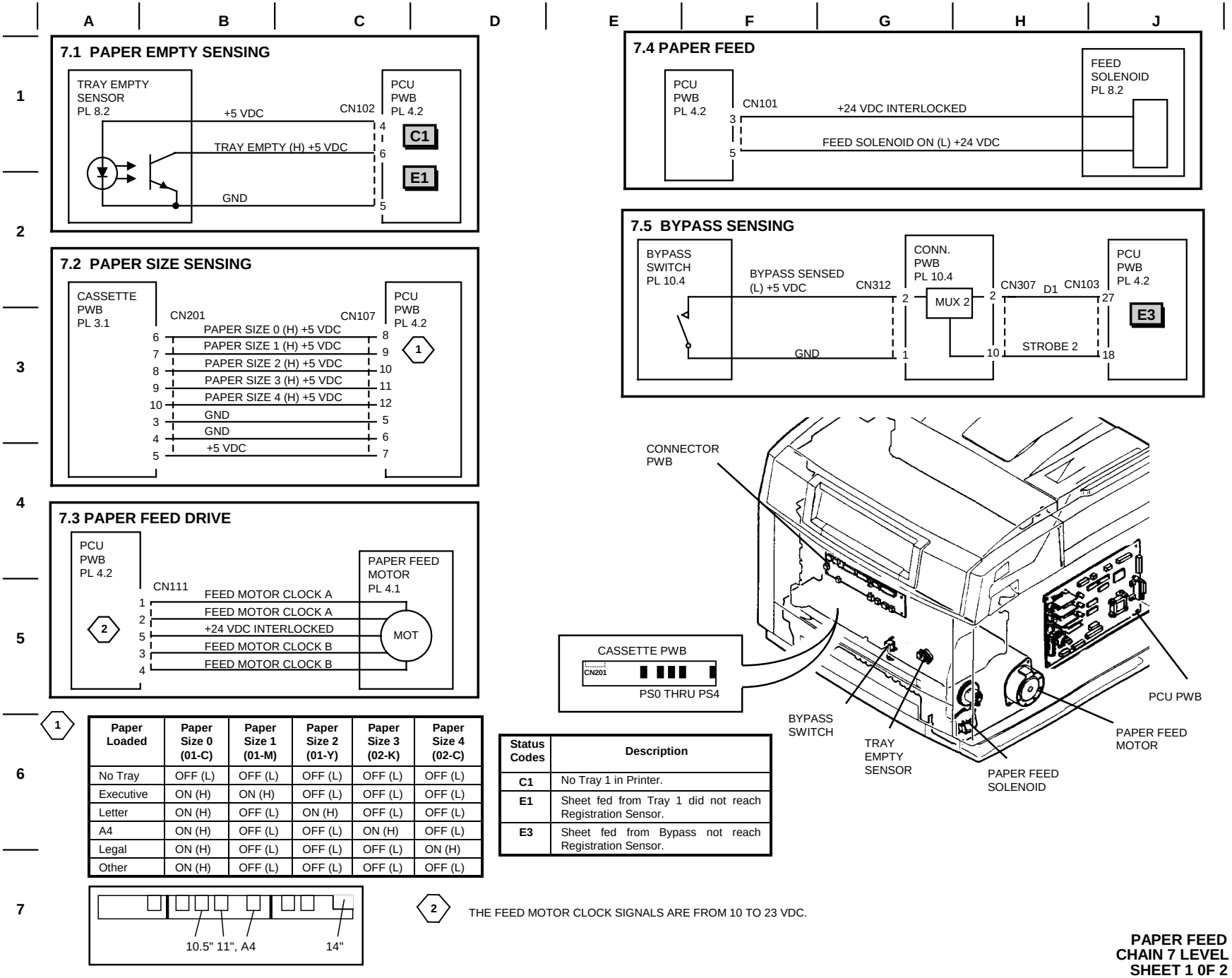




Signal	Description
STS	**Status**, IOT sends IOT Status signals to ESS
CMD	**Command**, ESS sends commands to the IOT
SRDY	**Status Ready**, ESS is ready to receive status signals
CRDY	**Command Ready**, IOT is ready to receive command signals
READY	**Ready, IOT** is ready to print
RES	**Reset, IOT** requests ESS reset
HSYNC	**Horizontal Sync**, IOT sends line sync to ESS
VSYNC	**Vertical Sync**, IOT sends page sync to ESS
DATA	**Data**, ESS sends raster data to the IOT
PAGE	**Page**, ESS is sending a page of data

Status Codes	Description
U4	Laser Diode failure.
U5	Polygon Motor failure.

LASER SCANNING
CHAIN 6 LEVEL 2
SHEET 1 0F 1



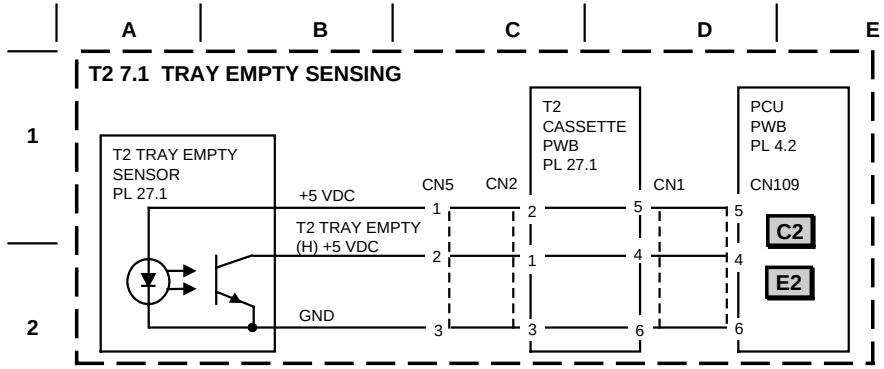
Paper Loaded	Paper Size 0 (01-C)	Paper Size 1 (01-M)	Paper Size 2 (01-Y)	Paper Size 3 (02-K)	Paper Size 4 (02-C)
No Tray	OFF (L)	OFF (L)	OFF (L)	OFF (L)	OFF (L)
Executive	ON (H)	ON (H)	OFF (L)	OFF (L)	OFF (L)
Letter	ON (H)	OFF (L)	ON (H)	OFF (L)	OFF (L)
A4	ON (H)	OFF (L)	OFF (L)	ON (H)	OFF (L)
Legal	ON (H)	OFF (L)	OFF (L)	OFF (L)	ON (H)
Other	ON (H)	OFF (L)	OFF (L)	OFF (L)	OFF (L)

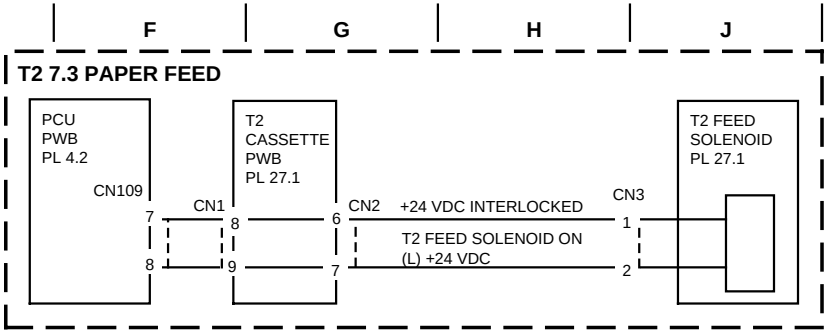
Status Codes	Description
C1	No Tray 1 in Printer.
E1	Sheet fed from Tray 1 did not reach Registration Sensor.
E3	Sheet fed from Bypass not reach Registration Sensor.

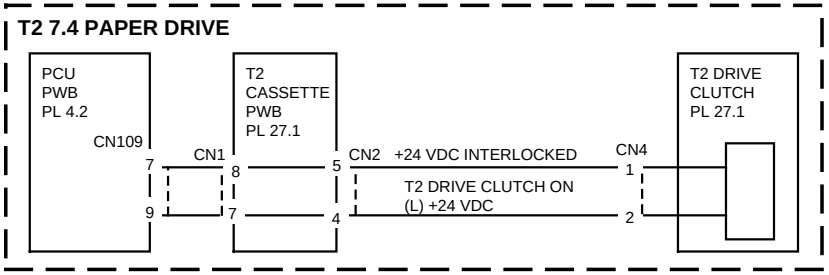
1

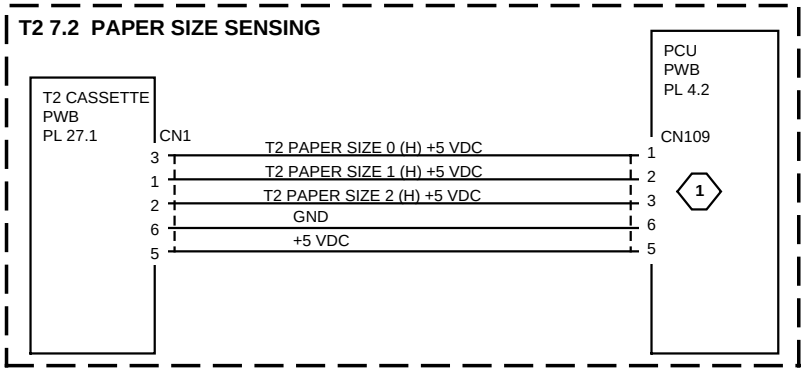
2 THE FEED MOTOR CLOCK SIGNALS ARE FROM 10 TO 23 VDC.

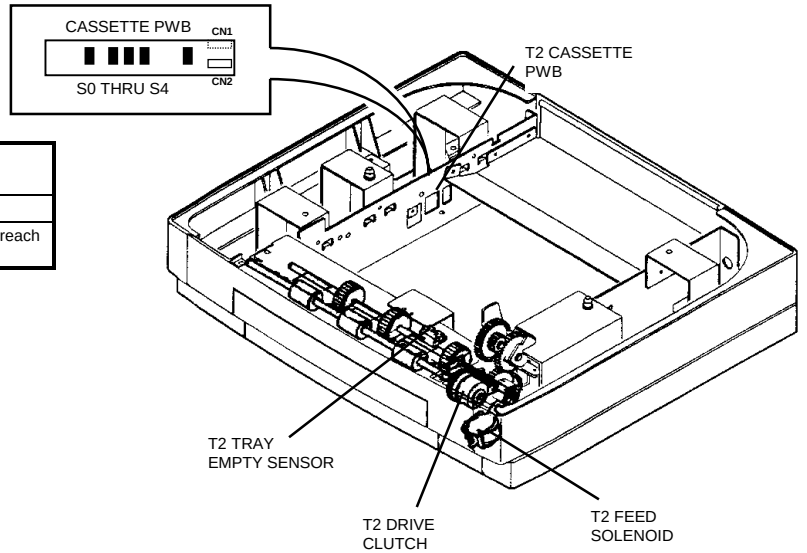
PAPER FEED CHAIN 7 LEVEL 2 SHEET 1 0F 2





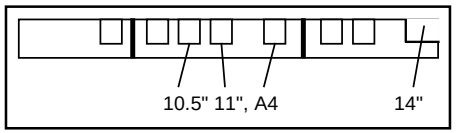






1

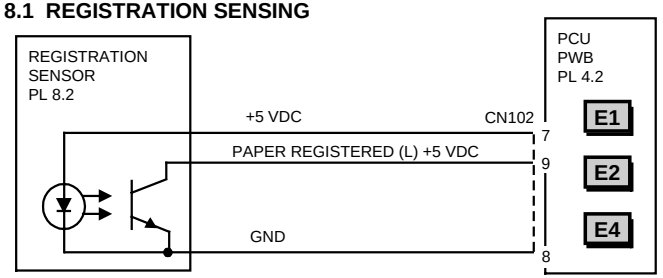
Paper Loaded	T2 Paper Size 0 (03-C)	T2 Paper Size 1 (03-M)	T2 Paper Size 2 (03-Y)
No Tray	OFF (H)	ON (H)	ON (H)
S0,S1 - Executive	ON (H)	OFF (L)	ON (H)
S0,S2 - Letter	OFF (L)	OFF (L)	ON (H)
S0,S3 - A4	ON (H)	ON (H)	OFF (L)
S0,S4 - Legal	OFF (L)	ON (H)	OFF (L)
S0 - Other	ON (H)	ON (H)	ON (H)



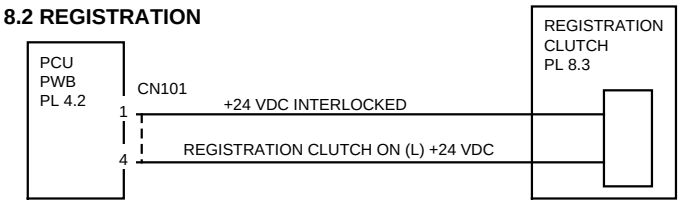
Status Codes	Description
C2	No Tray 2 in Printer
E2	Sheet fed from Tray 2 did not reach Registration Sensor.

T2 PAPER FEED
CHAIN 7 LEVEL 2
SHEET 2 0F 2

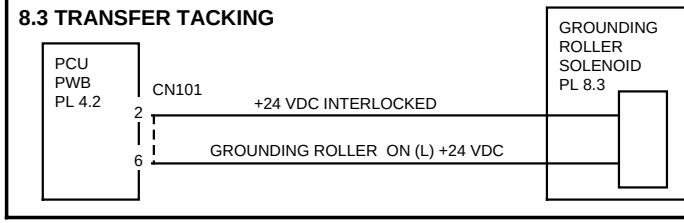
8.1 REGISTRATION SENSING



8.2 REGISTRATION

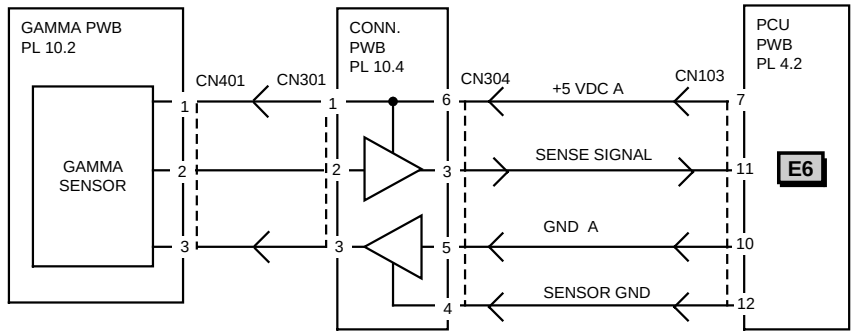


8.3 TRANSFER TACKING

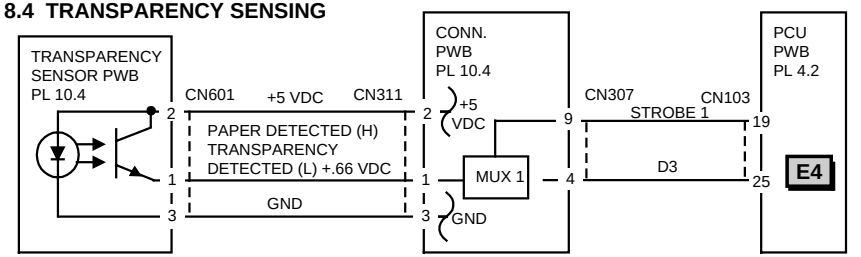


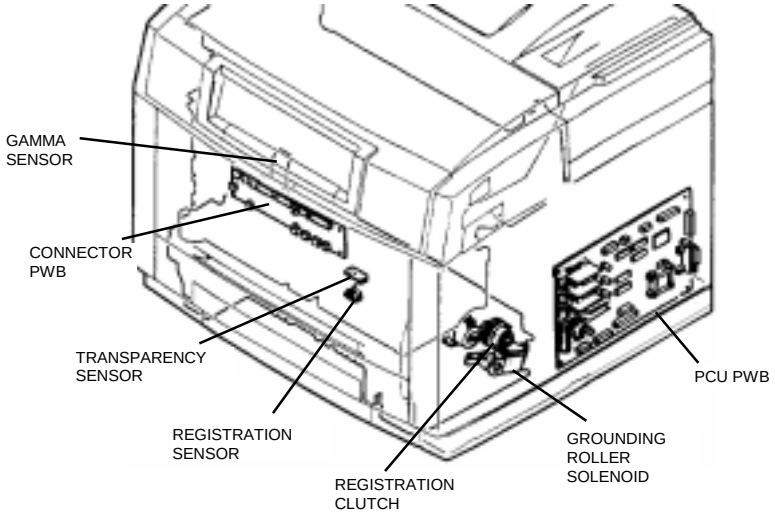
Status Codes	Description
E1	Sheet fed from Tray 1 did not reach Registration Sensor.
E2	Sheet fed from Tray 2 did not reach Registration Sensor.
E3	Sheet fed from Bypass did not reach Registration Sensor.
E4	Sheet on Registration Sensor or Transparency Sensor at power on.
E6	Sheet made Registration Sensor did not reach Gamma Sensor.

8.5 GAMMA SENSING



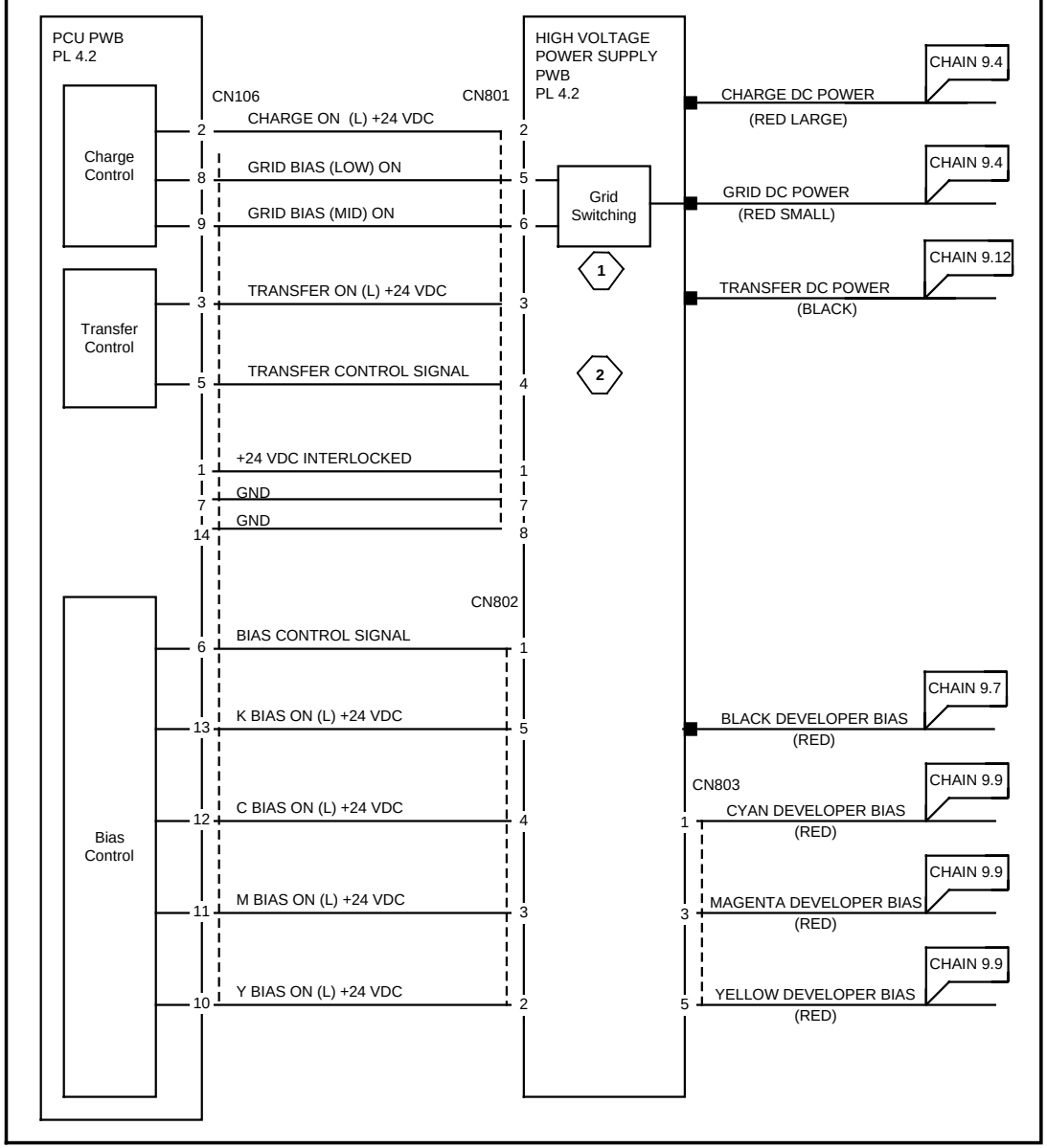
8.4 TRANSPARENCY SENSING

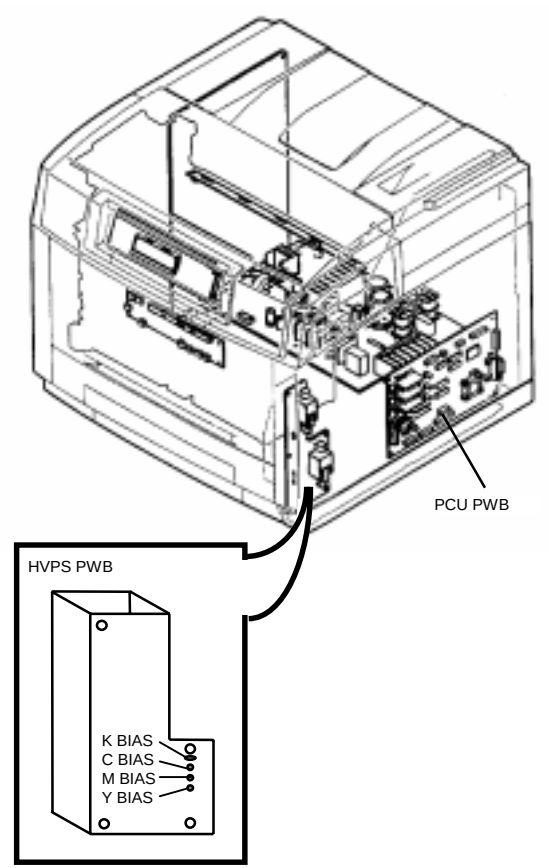




REGISTRATION
CHAIN 8 LEVEL 2
SHEET 1 0F 1

9.1 COROTRON POWER AND /DEVELOPER BIAS GENERATION





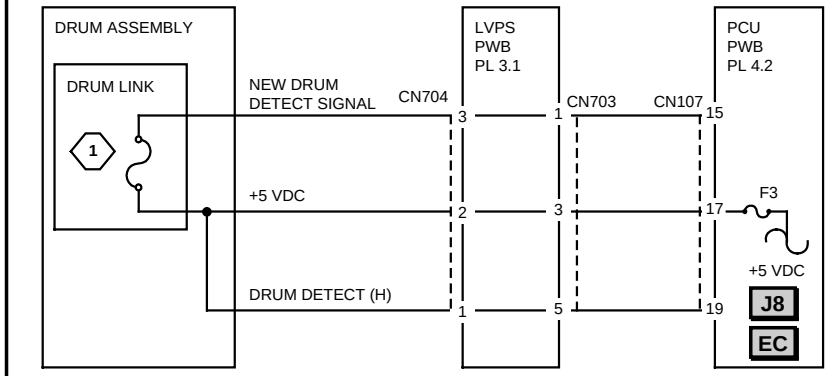
1

GRID BIAS LOW SIGNAL	GRID BIAS MID SIGNAL	GRID VOLTAGE
0 V	24 V	550
24 V	0 V	650
24 V	24 V	750

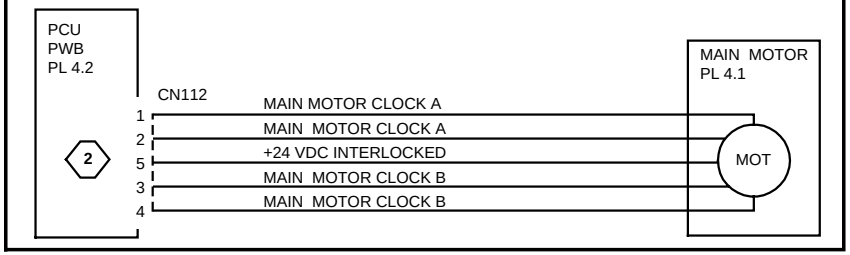
2 THE TRANSFER CONTROL SIGNAL INCREASES THE TRANSFER BIAS FOR TRANSPARENCIES. THIS SIGNAL IS APPROXIMATELY 2.5V FOR PAPER AND 4.6V FOR TRANSPARENCIES.

XEROGRAPHICS
CHAIN 9 LEVEL 2
SHEET 1 0F 10

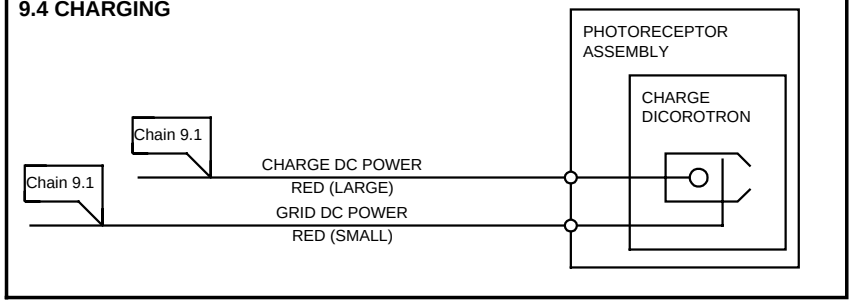
9.2 DRUM DETECTION

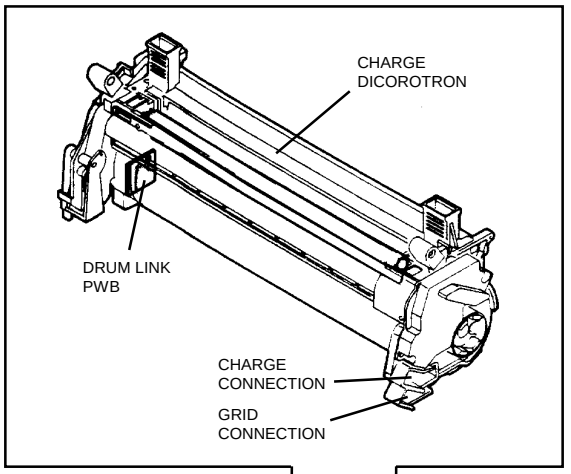


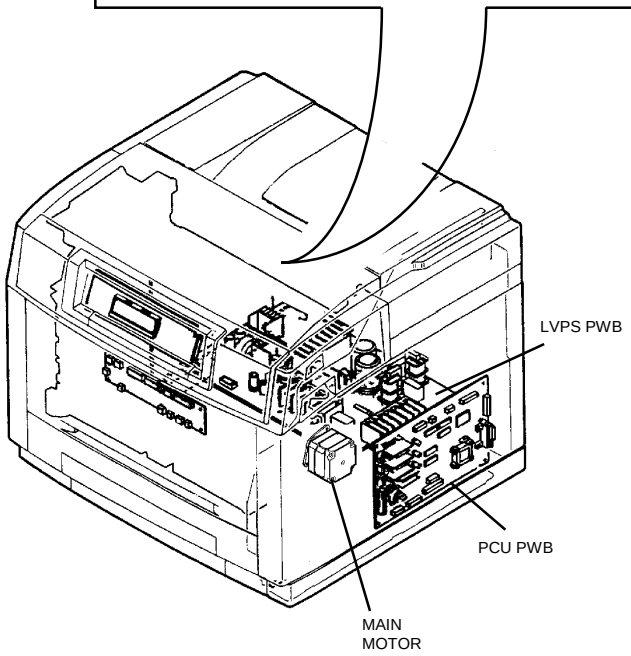
9.3 MAIN DRIVE



9.4 CHARGING







1. THE DRUM LINK IS USED TO DETECT WHEN A NEW DRUM MODULE IS INSTALLED. IT MELTS OPEN AND STARTS THE DRUM COUNT.
2. THE MAIN MOTOR CLOCK SIGNALS ARE FROM 17 TO 20 VDC.

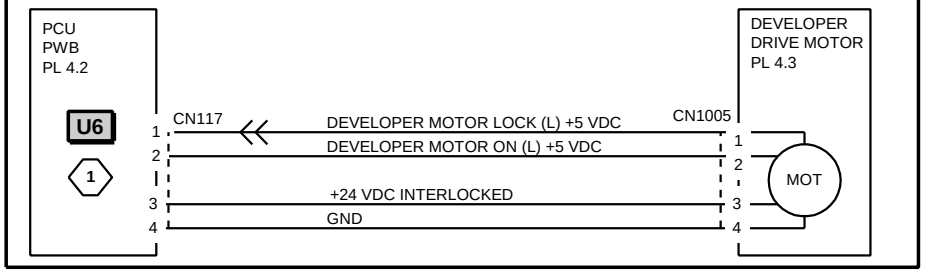
Status Codes	Description
J8	A New Drum Module needs to be installed.
EC	The Drum Module is not installed correctly.

XEROGRAPHICS
CHAIN 9 LEVEL 2
SHEET 2 0F 10

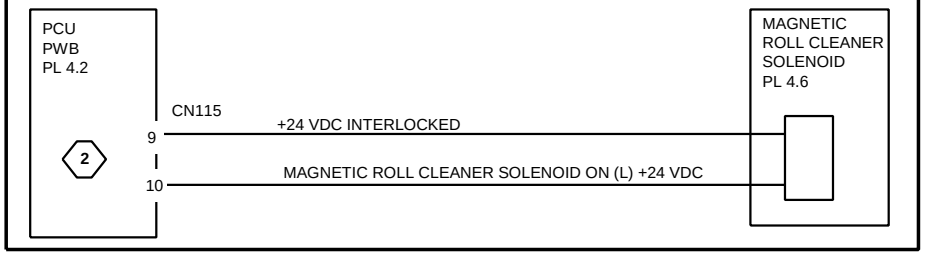
A B C D E F G H J

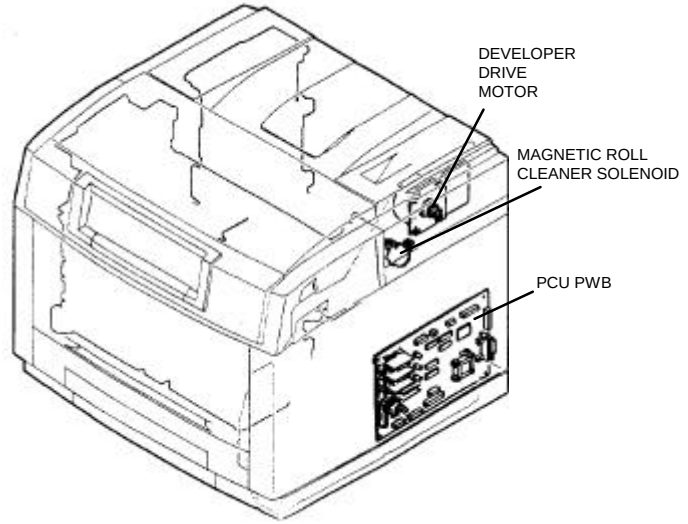
1 2 3 4 5 6 7

9.5 DEVELOPER DRIVE



9.6 MAGNETIC ROLL CLEANING



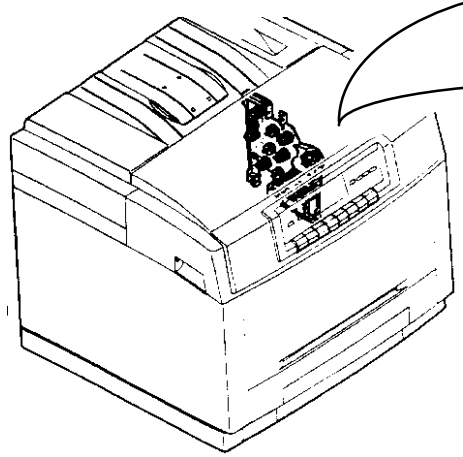


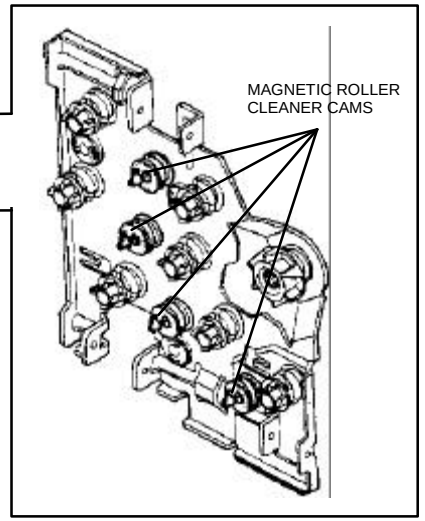
1 THE DEVELOPER DRIVE MOTOR SUPPLIES DRIVE FOR ALL FOUR COLORS.

2 WHEN THE MAGNETIC ROLL CLEANER SOLENOID IS DEENERGIZED, ALL FOUR MAGNETIC ROLLS ARE READY TO BE CLEANED.

WHEN THE SOLENOID IS ENERGIZED, ALL CLEANER BLADES ARE MOVED AWAY FROM THE ROLLS. THE ROLL WHICH IS ROTATING CREATES A BRUSH AND DEVELOPS AN IMAGE.

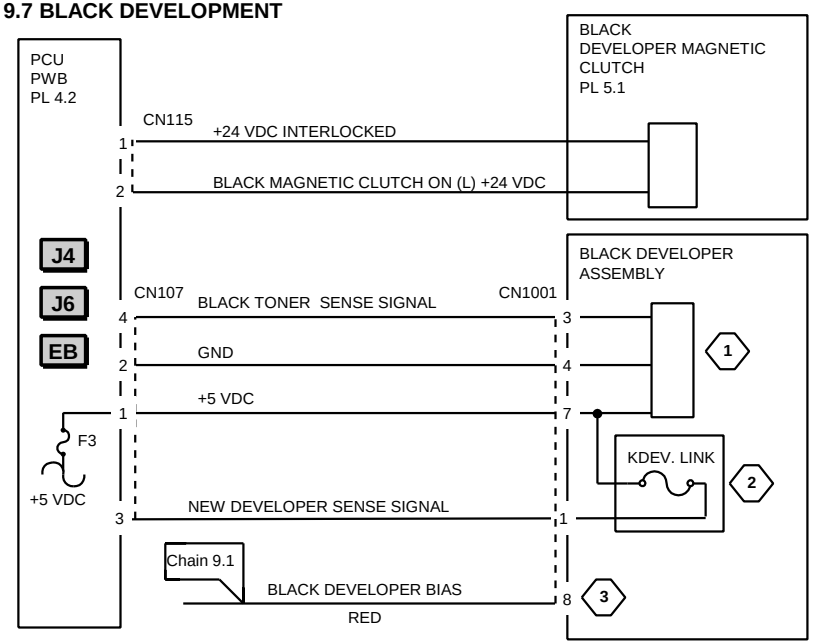
Status Codes	Description
U6	The Developer Drive motor is not rotating.



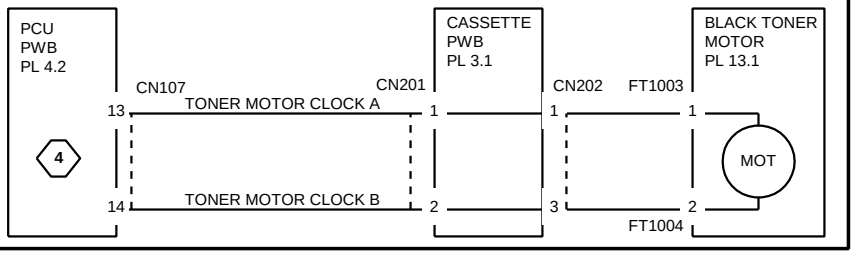


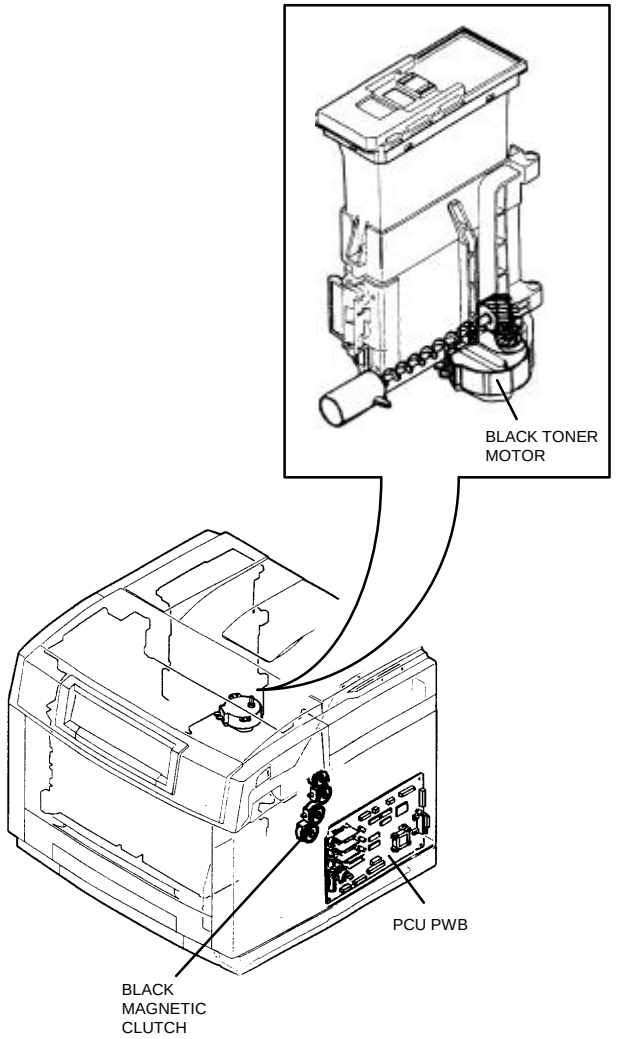
XEROGRAPHICS
CHAIN 9 LEVEL 2
SHEET 3 0F 10

9.7 BLACK DEVELOPMENT



9.8 BLACK TONER CONTROL





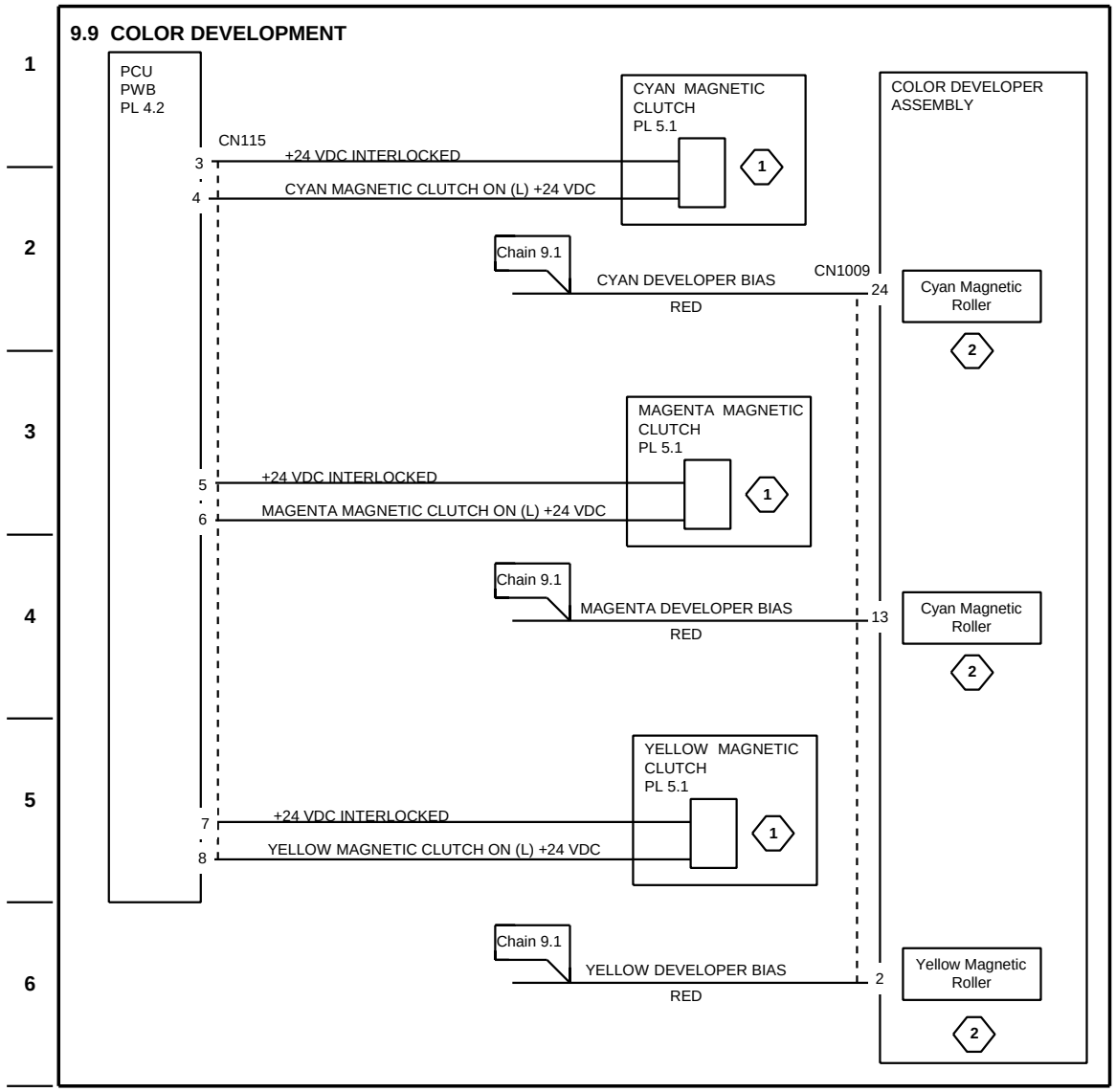
1. THE BLACK TONER SENSE SIGNAL MEASURES THE TONER CONCENTRATION IN THE BLACK DEVELOPER HOUSING.
2. THE BLACK DEVELOPER LINK IS USED TO DETECT WHEN A NEW BLACK DEVELOPER MODULE IS INSTALLED. IT MELTS OPEN AND STARTS THE BLACK DEVELOPER COUNT.
3. THE PCU PWB CHANGES THE DEVELOPER BIAS IN ORDER TO CHANGE THE IMAGE DENSITY. IT USES INPUT FROM THE GAMMA SENSOR TO DETERMINE THE CHANGE REQUIRED.
4. THE BLACK TONER MOTOR IS CONTROLLED BY THE BLACK TONER SENSE SIGNAL. IT DETERMINES WHEN TO RUN THE TONER MOTOR.

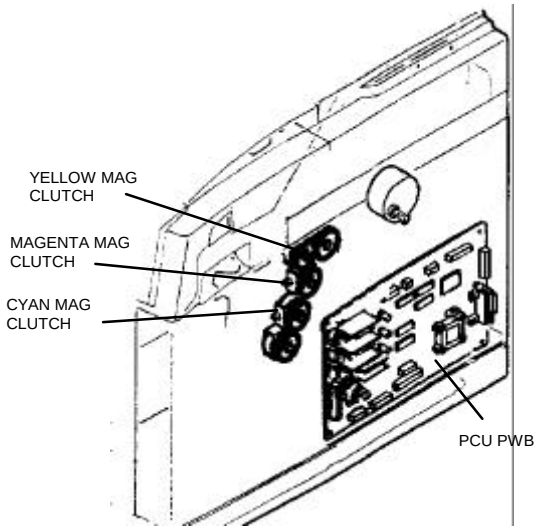
THE CLOCK A AND CLOCK B SIGNALS ARE APPROXIMATELY 12 VDC WHEN MEASURED TO GROUND.

THE CLOCK A AND CLOCK B SIGNALS ARE APPROXIMATELY 22 VAC WHEN MEASURED ACROSS A & B

Status Codes	Description
J4	The Black toner is low.
J6	The Sense signal is out of range.
EB	The Black Developer is misinstalled.

XEROGRAPHICS
CHAIN 9 LEVEL 2
SHEET 4 0F 10



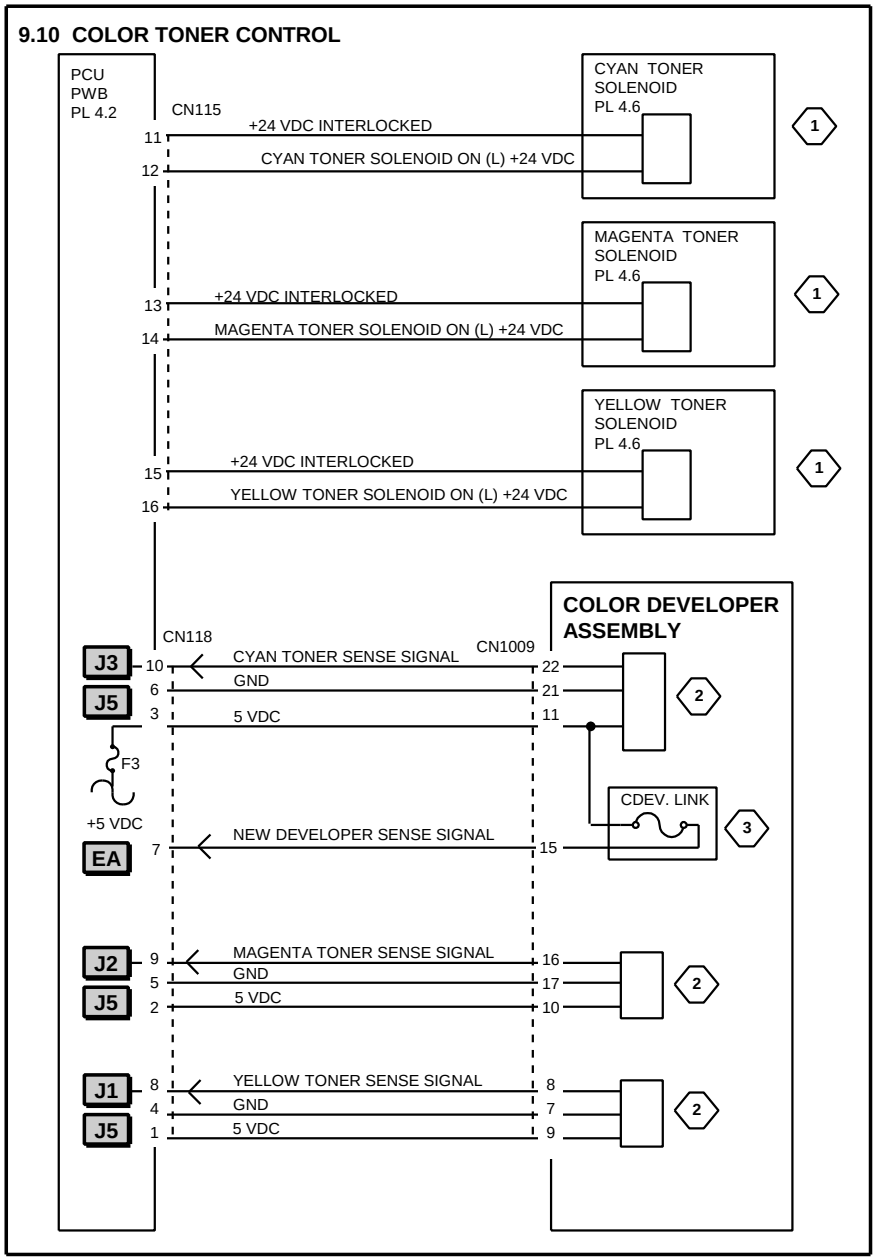


1 WHEN ONE OF THE COLOR MAGNETIC CLUTCHES IS ENERGIZED, THE APPROPRIATE MAGNETIC ROLL ROTATES AND DEVELOPS THE SELECTED COLOR.

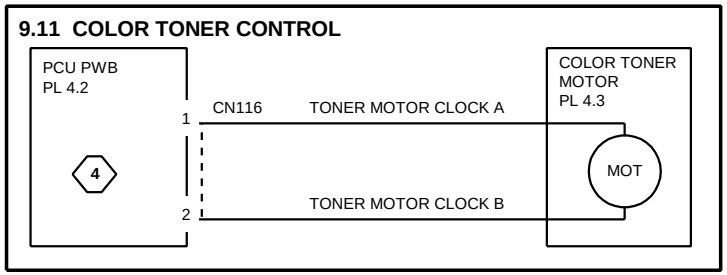
1 THE BIAS VOLTAGE SUPPLIED TO THE CYAN, MAGENTA, AND YELLOW MAGNETIC ROLLERS IS DETERMINED BY THE GAMMA SENSOR DURING THE PROCESS CONTROL SETUP.

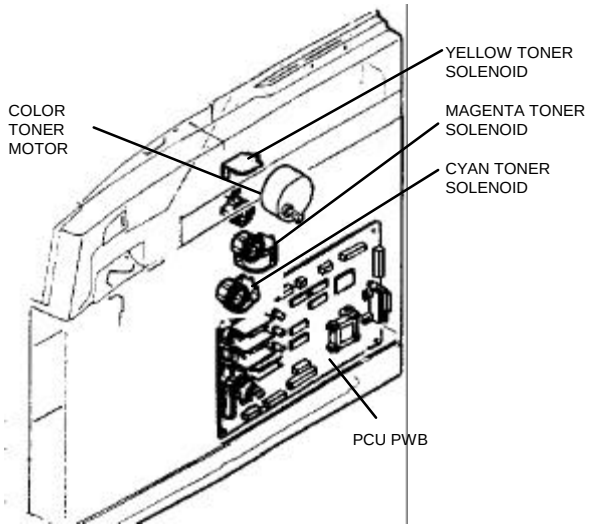
XEROGRAPHICS
CHAIN 9 LEVEL 2
SHEET 5 0F 10

9.10 COLOR TONER CONTROL



9.11 COLOR TONER CONTROL





1. WHEN ONE OF THE TONER SOLENOIDS IS ENERGIZED, THE TONER MOTOR RUNS AND THE TONER IS DISPENSED INTO THE DEVELOPER HOUSING.
2. THE TONER SENSE SIGNALS MEASURE THE TONER CONCENTRATION IN THE DEVELOPER HOUSINGS.
3. THE COLOR DEVELOPER LINK IS USED TO DETECT WHEN A NEW COLOR DEVELOPER MODULE IS INSTALLED. IT MELTS AND RESETS THE Y, C, AND M, DEVELOPER COUNT.
4. THE COLOR TONER MOTOR IS CONTROLLED BY THE SENSE SIGNALS. THE MOTOR PROVIDES DISPENSE DRIVE FOR ALL THREE COLORS.

   THE CLOCK A AND CLOCK B SIGNALS ARE APPROXIMATELY 12 VDC WHEN MEASURED TO GROUND.

   THE CLOCK A AND CLOCK B SIGNALS ARE APPROXIMATELY 22 VAC WHEN MEASURED ACROSS A & B

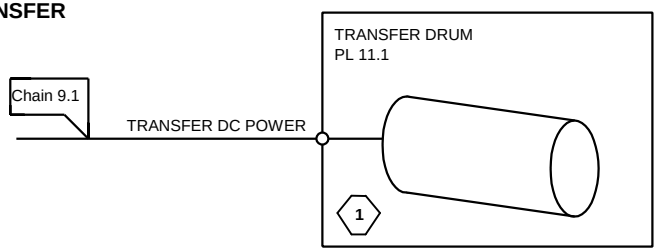
Status Codes	Description
J1	The Yellow toner is low.
J2	The Magenta toner is low.
J3	The Cyan toner is low.
J5	One of the Sense signals is out of range.
EA	The color developer is misinstalled or is overtoned

XEROGRAPHICS
CHAIN 9 LEVEL 2
SHEET 6 0F 10

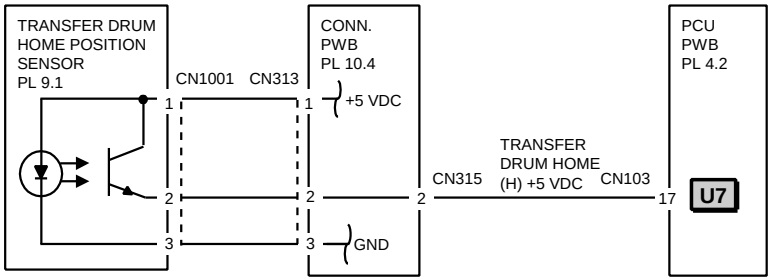
A B C D E F G H J

1 2 3 4 5 6 7

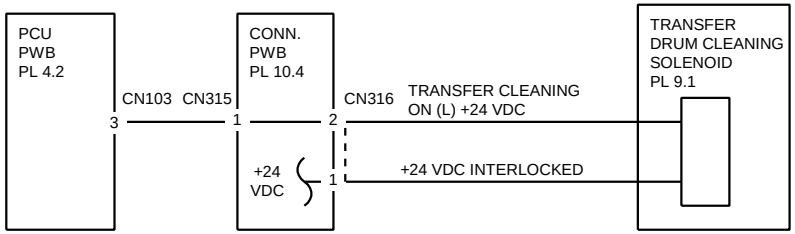
9.12 TRANSFER



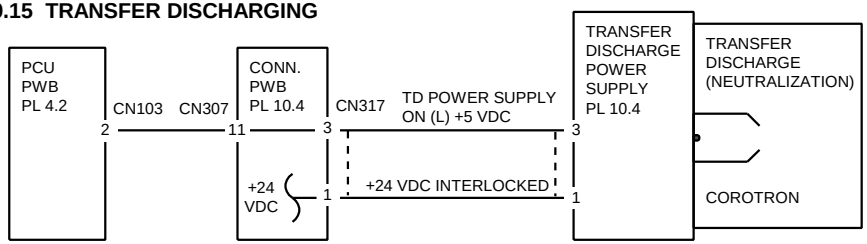
9.13 TRANSFER DRUM POSITIONING

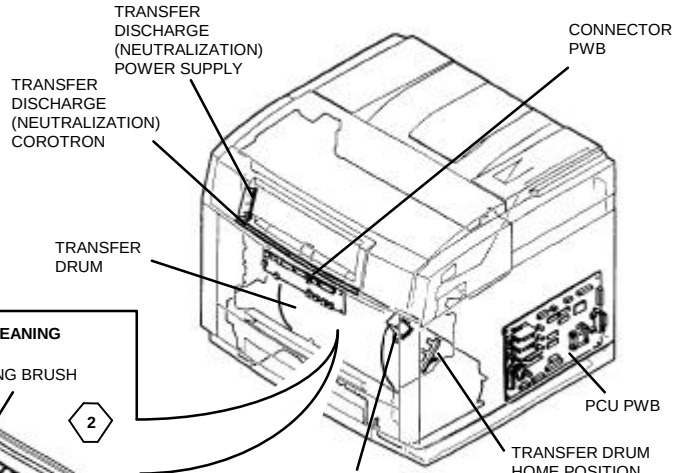


9.14 TRANSFER CLEANING CONTROL



9.15 TRANSFER DISCHARGING





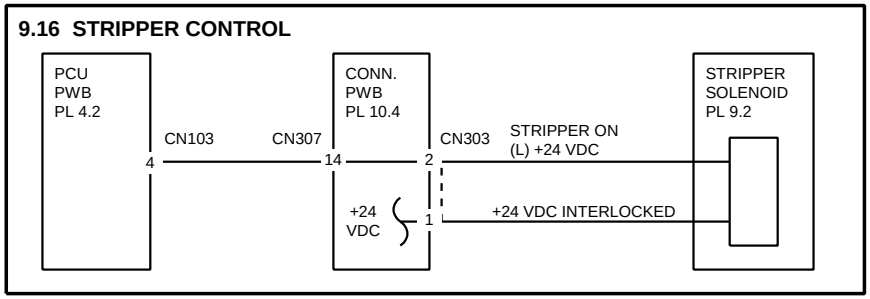
1 THE TRANSFER DRUM IS GEAR DRIVEN BY THE PRINT DRUM VIA THE MAIN DRIVE MOTOR (BSD 9.3).

2 DRIVE FOR THE TRANSFER DRUM CLEANING SYSTEM IS PROVIDED BY THE FUSER MOTOR (BSD 10.1).

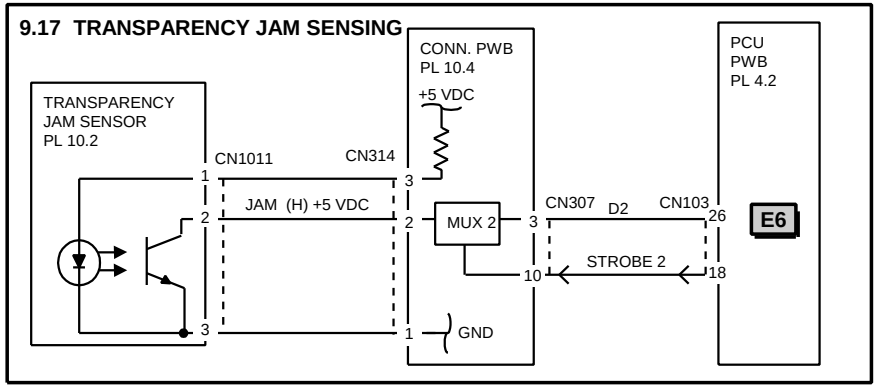
Status Codes	Description
U7	Transfer Drum (Main Drive Motor) did not rotate.

XEROGRAPHICS
CHAIN 9 LEVEL 2
SHEET 7 0F 10

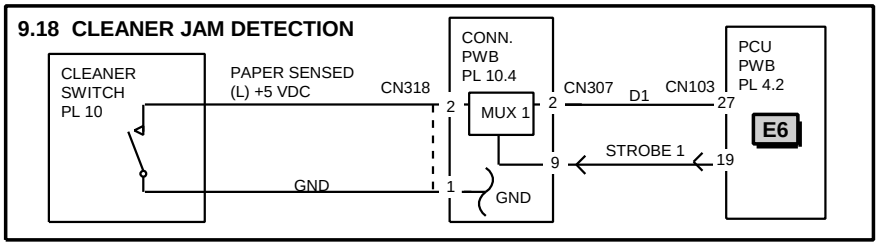
9.16 STRIPPER CONTROL

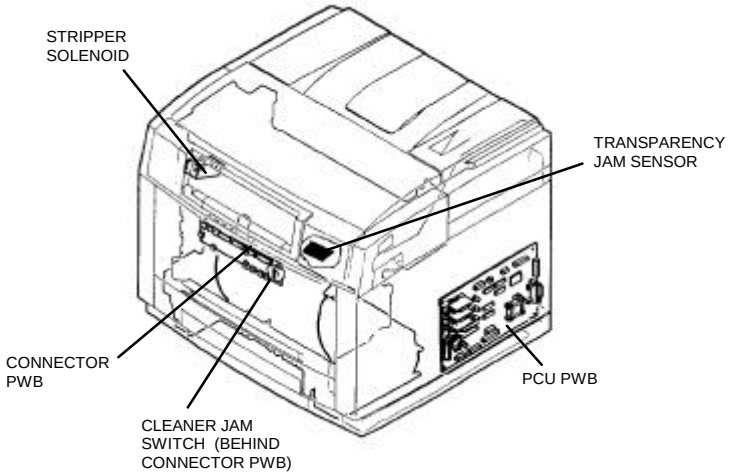


9.17 TRANSPARENCY JAM SENSING

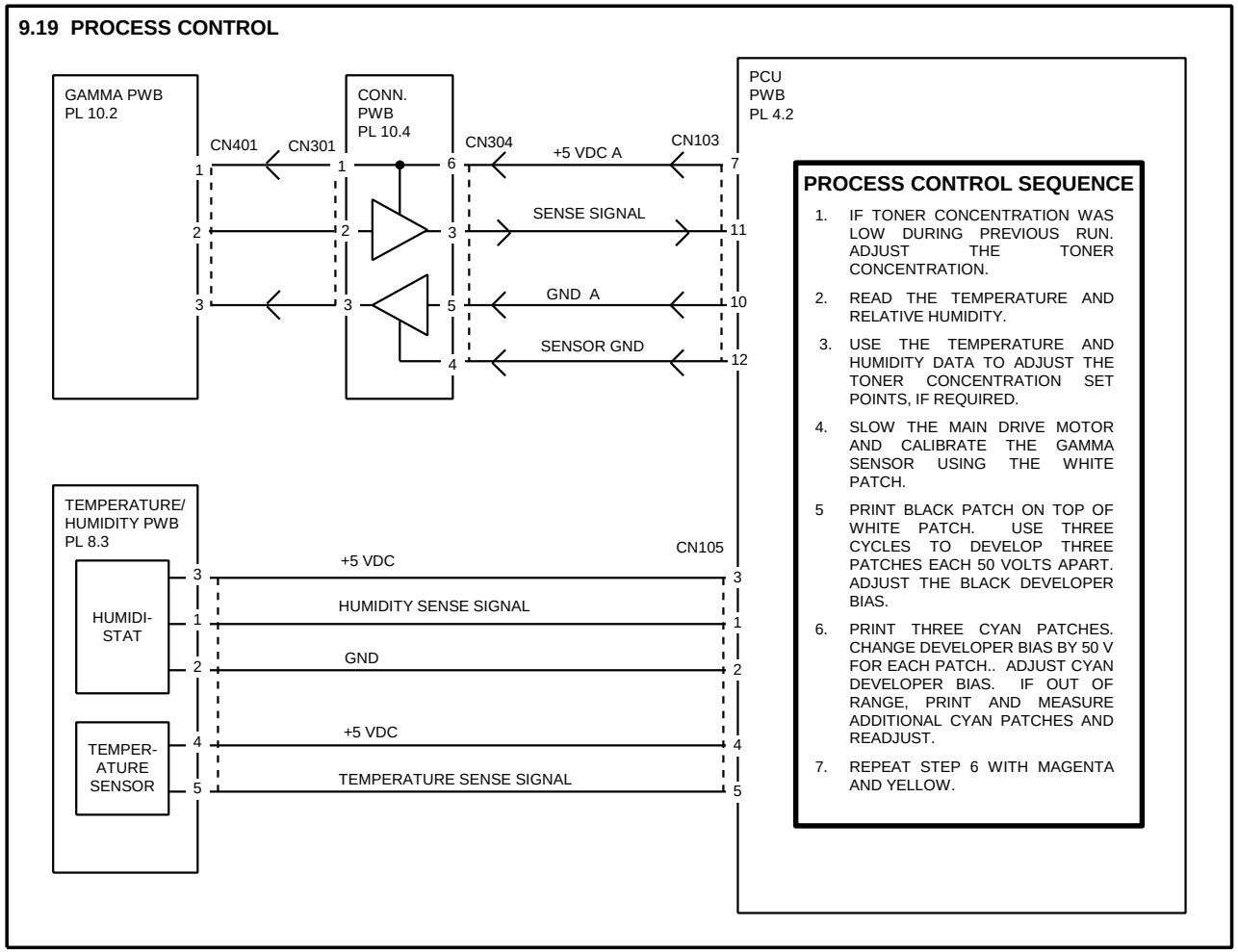


9.18 CLEANER JAM DETECTION



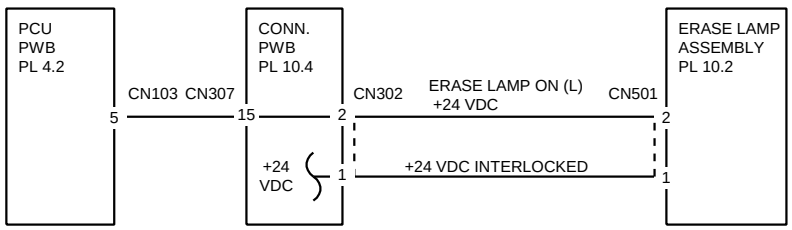


XEROGRAPHICS
CHAIN 9 LEVEL 2
SHEET 8 0F 10

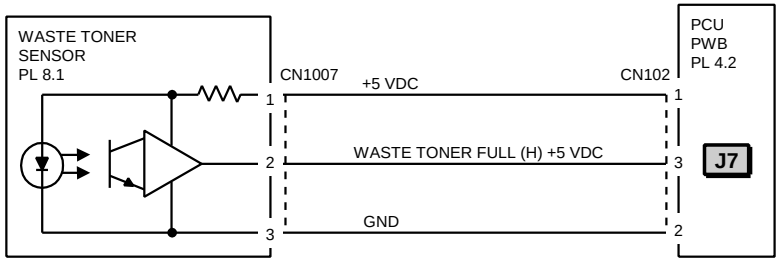

9.19 PROCESS CONTROL
GAMMA PWB
PL 10.2
CONN.
PWB
PL 10.4
PCU
PWB
PL 4.2
CN401
CN301
CN304
CN103
+5 VDC A
SENSE SIGNAL
GND A
SENSOR GND
TEMPERATURE/
HUMIDITY PWB
PL 8.3
HUMIDI-
STAT
TEMPER-
ATURE
SENSOR
CN105
+5 VDC
HUMIDITY SENSE SIGNAL
GND
+5 VDC
TEMPERATURE SENSE SIGNAL
PROCESS CONTROL SEQUENCE
1. IF TONER CONCENTRATION WAS LOW DURING PREVIOUS RUN. ADJUST THE TONER CONCENTRATION.
2. READ THE TEMPERATURE AND RELATIVE HUMIDITY.
3. USE THE TEMPERATURE AND HUMIDITY DATA TO ADJUST THE TONER CONCENTRATION SET POINTS, IF REQUIRED.
4. SLOW THE MAIN DRIVE MOTOR AND CALIBRATE THE GAMMA SENSOR USING THE WHITE PATCH.
5 PRINT BLACK PATCH ON TOP OF WHITE PATCH. USE THREE CYCLES TO DEVELOP THREE PATCHES EACH 50 VOLTS APART. ADJUST THE BLACK DEVELOPER BIAS.
6. PRINT THREE CYAN PATCHES. CHANGE DEVELOPER BIAS BY 50 V FOR EACH PATCH.. ADJUST CYAN DEVELOPER BIAS. IF OUT OF RANGE, PRINT AND MEASURE ADDITIONAL CYAN PATCHES AND READJUST.
7. REPEAT STEP 6 WITH MAGENTA AND YELLOW.

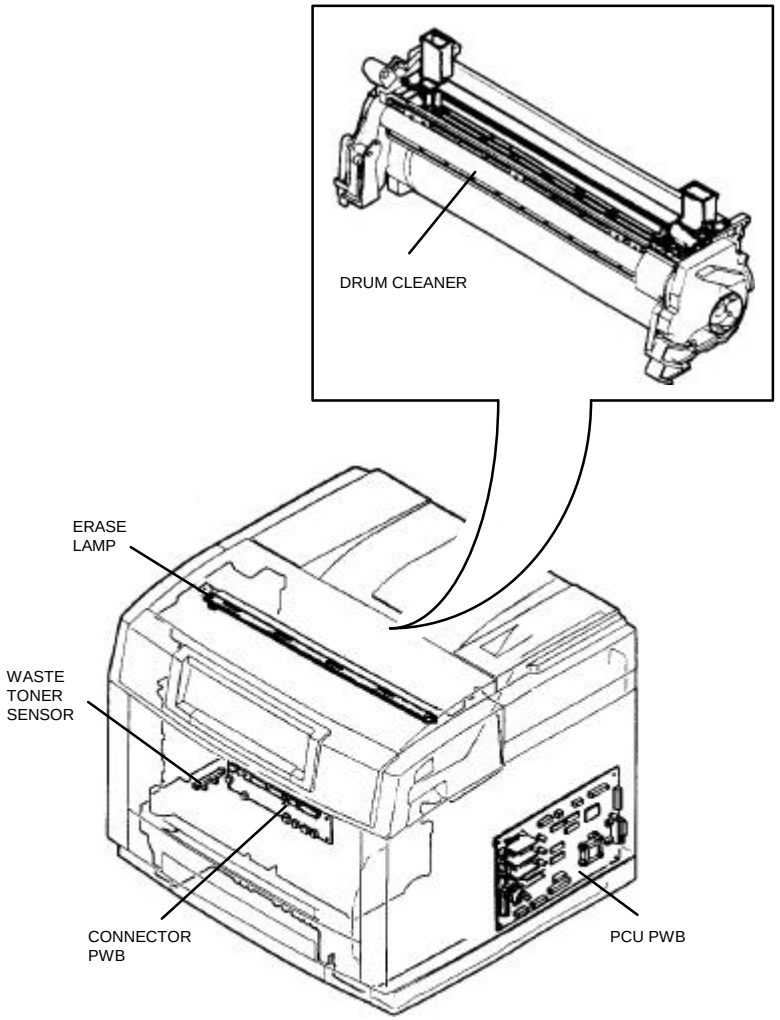
XEROGRAPHICS
CHAIN 9 LEVEL 2
SHEET 9 0F 10

9.20 ERASE LAMP CONTROL



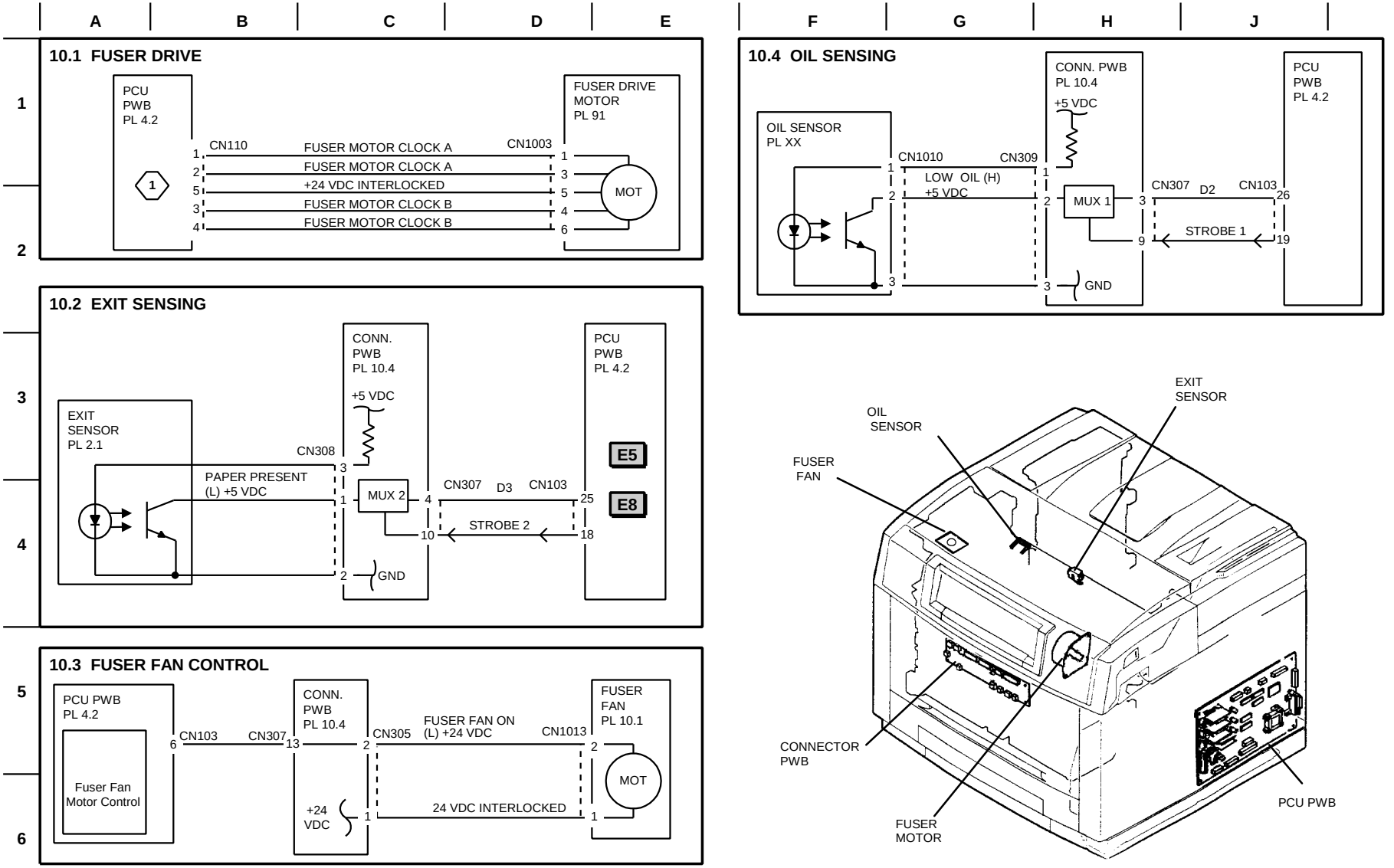
9.21 WASTE TONER FULL CONTROL





Status Codes	Description
J7	Waste Toner bottle is full or not installed correctly.

XEROGRAPHICS
CHAIN 9 LEVEL 2
SHEET 10 0F 10

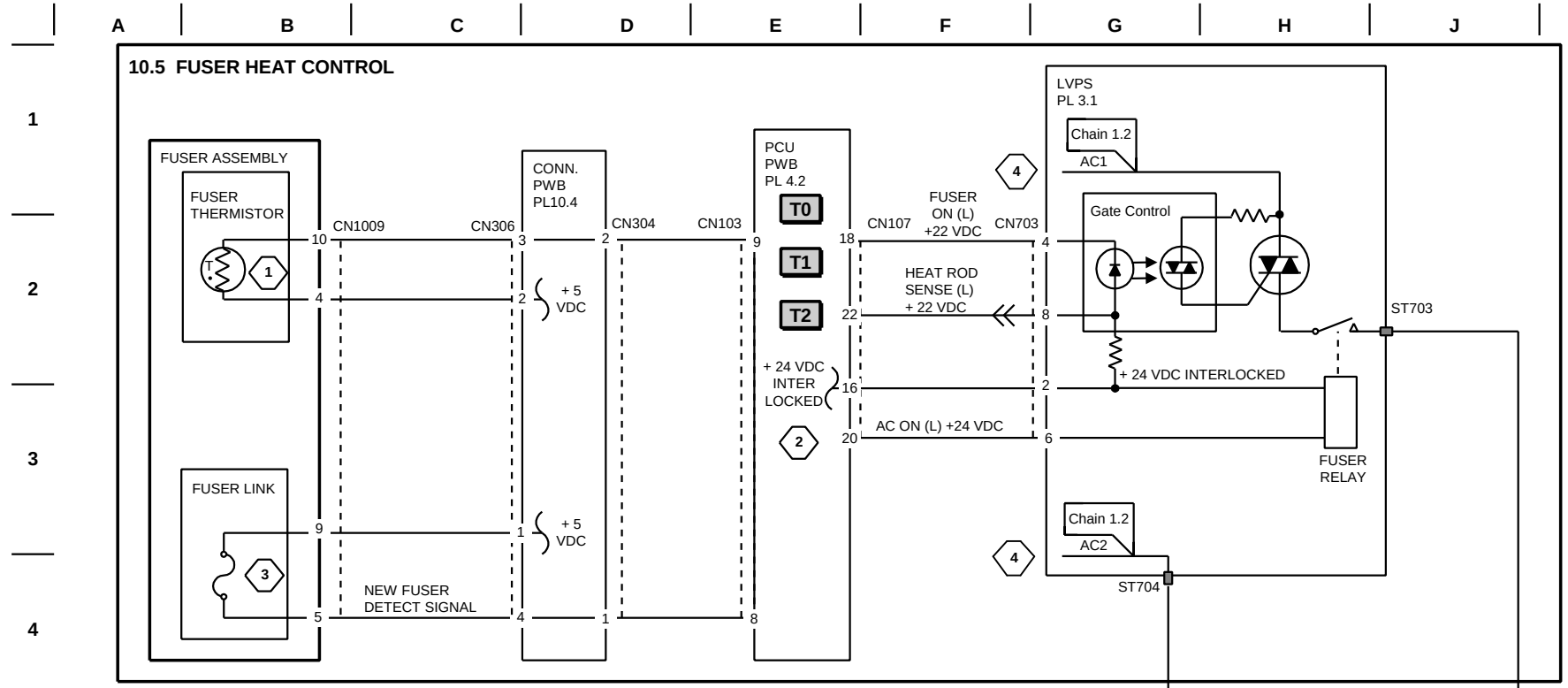


1 THE FUSER DRIVE MOTOR IS ROTATES AT THREE DIFFERENT SPEEDS.

1. SLOW SPEED IS USED WHEN A TRANSPARENCY IS MOVING THROUGH THE FUSER.
2. MEDIUM SPEED IS USED TO CAM THE CLEANER UP TO THE TRANSFER DRUM AND THEN ROTATE THE CLEANING BRUSH WHILE THE TRANSFER DRUM IS BEING CLEANED.
3. HIGH SPEED IS USED WHEN THE PRINT IS MOVING THROUGH THE FUSER.

Status Codes	Description
E5	Sheet did not reach Exit Sensor.
E8	Sheet on Exit Sensor at power on.

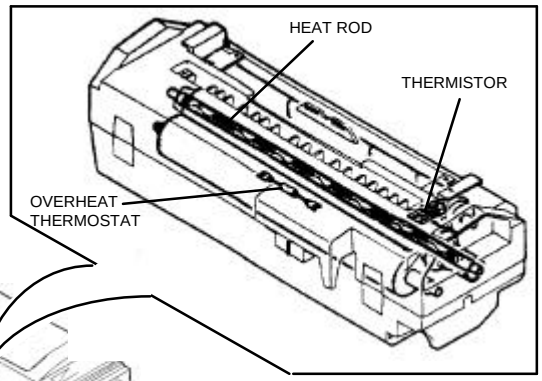
COPY TRANSPORTATION AND FUSING
CHAIN 10 LEVEL 2
SHEET 1 0F 2

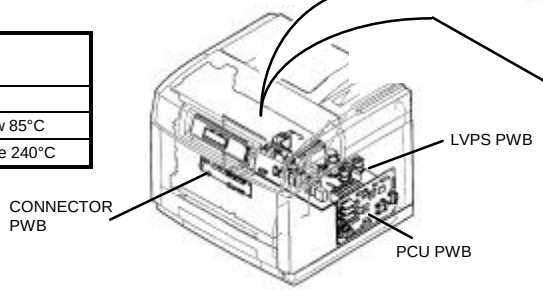


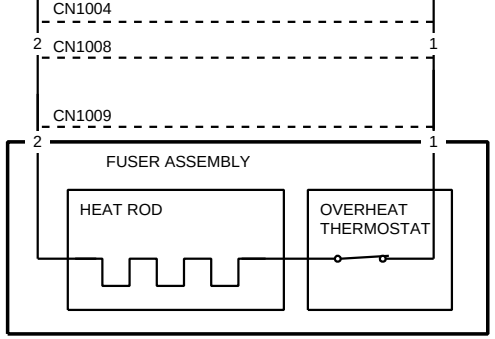
1. THE PCU USES INPUT FROM THE THERMISTOR TO GATE THE TRIAC AND SWITCH THE HEAT ROD ON.
   VOLTAGE AT CN103-9,
   COLD FUSER APPX. O VDC
   HOT FUSER APPX . 3.5 VDC
2. THE AC ON (L) SIGNAL SWITCHES THE AC OFF WHEN THE INTERLOCKS ARE OPEN, OR WHEN A MALFUNCTION OCCURS.
3. THE FUSER LINK IS USED TO DETECT WHEN A NEW FUSER ASSEMBLY IS INSTALLED. IT MELTS OPEN AND RESETS THE FUSER COUNT.
4. 115 VAC PRINTERS, AC1 = 115 VAC - AC2 = NEUTRAL

   220 VAC PRINTERS, AC1 = 110 VAC - AC2 = 110 VAC

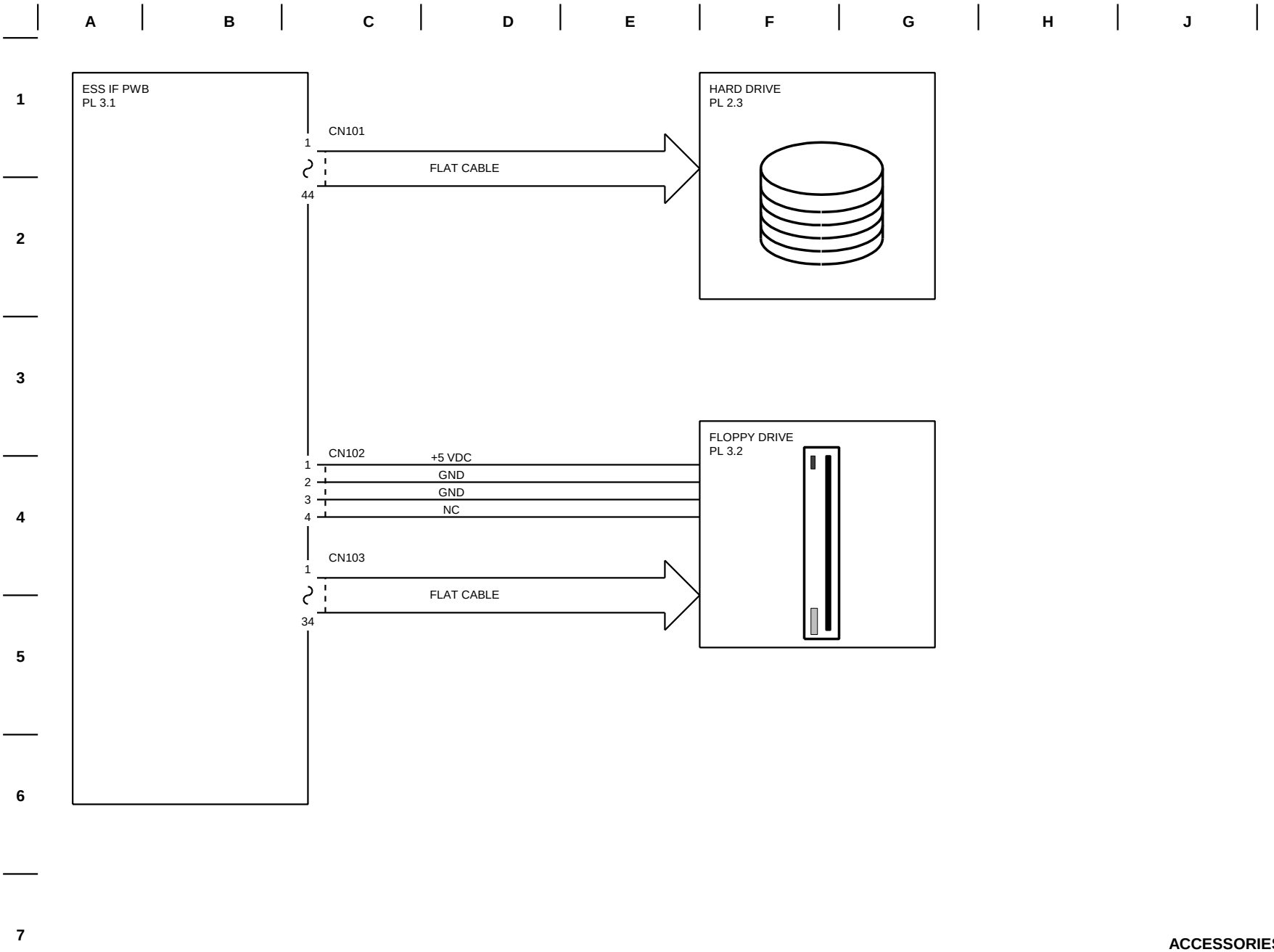
Status Codes	Description
T0	The Thermistor is open.
T1	The temperature is below 85°C
T2	The temperature is above 240°C







COPY TRANSPORTATION AND FUSING CHAIN 10 LEVEL 2 SHEET 2 0F 2



ACCESSORIES
HARD DRIVE/MEDIA SERVER
CHAIN 13 LEVEL 2
SHEET 1 0F 1

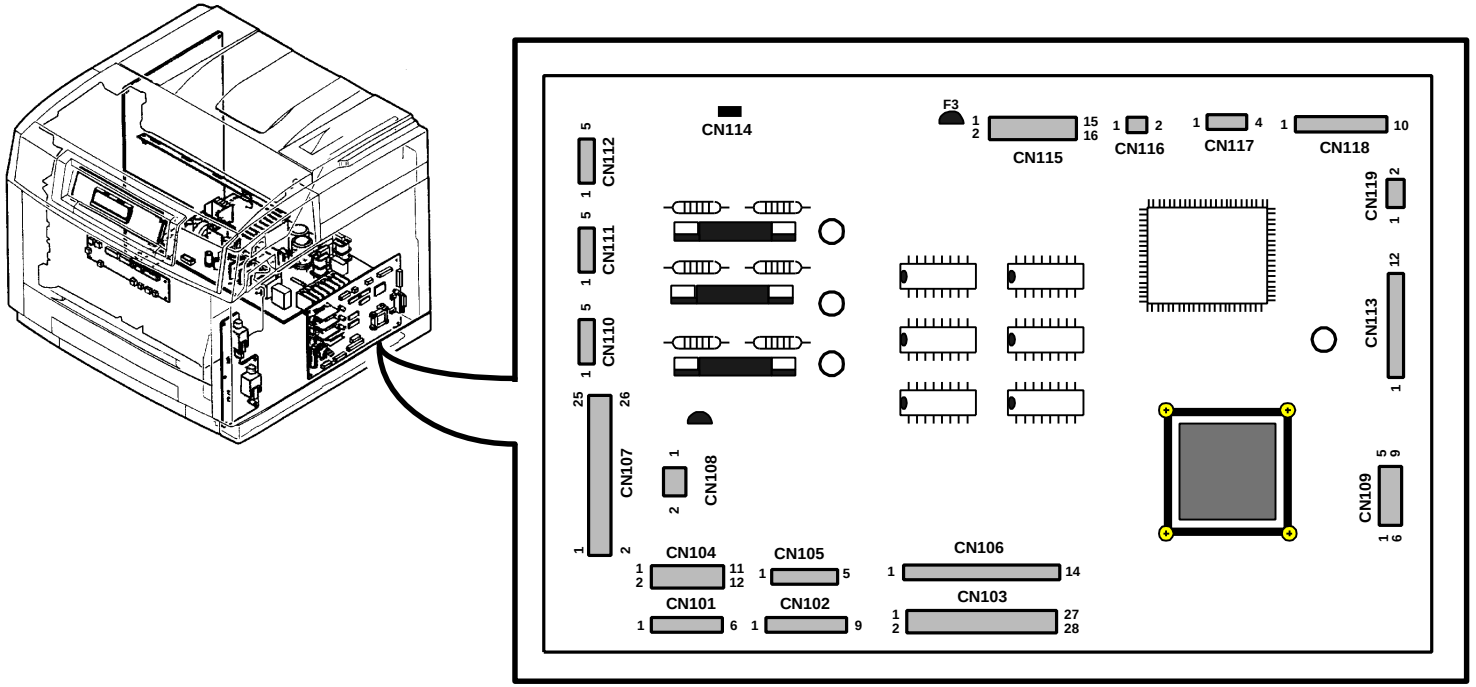


Figure 7-1. PCU Connectors

CN101	
Pin	Destination
1	Registration Clutch
2	Grounding Roller Clutch
3	Feed Solenoid
4	Registration Clutch
5	Feed Solenoid
6	Grounding Roller Clutch

CN102	
Pin	Destination
1	CN1007-1 Waste Bot. Full
2	CN1007-3 Waste Bot. Full
3	CN1007-2 Waste Bot Full
4	Paper Empty Sensor
5	Paper Empty Sensor
6	Paper Empty Sensor
7	Paper In (Reg.) Sensor
8	Paper In (Reg.) Sensor
9	Paper In (Reg.) Sensor

CN103	
Pin	Destination
1	CN307-12 Conn. PWB
2	CN307-11 Conn. PWB
3	CN315-1 Conn. PWB
4	CN307-14 Conn. PWB
5	CN307-15 Conn. PWB
6	CN307-13 Conn. PWB
7	CN304-6 Conn. PWB
8	CN304-1 Conn. PWB
9	CN304-2 Conn. PWB
10	CN304-5 Conn. PWB
11	CN304-3 Conn. PWB
12	CN304-4 Conn. PWB
13	CN307-6 Conn. PWB
14	CN307-8 Conn. PWB
15	CN307-5 Conn. PWB
16	CN307-7 Conn. PWB
17	CN315-2 Conn. PWB
18	CN307-10 Conn. PWB
19	CN307-9 Conn. PWB
20	CN315-7 Conn. PWB
21	CN315-6 Conn. PWB
22	CN315-5 Conn. PWB
23	CN315-4 Conn. PWB
24	CN315-3 Conn. PWB
25	CN307-4 Conn. PWB
26	CN307-3 Conn. PWB
27	CN307-2 Conn. PWB
28	CN307-1 Conn. PWB

CN104	
Pin	Destination
1	CN104-9 ESS PWB
2	CN104-5 ESS PWB
3	No Connection
4	No Connection
5	CN104-11 ESS PWB
6	CN104-7 ESS PWB
7	CN104-12 ESS PWB
8	CN104-3 ESS PWB
9	CN104-6 ESS PWB
10	CN104-4 ESS PWB
11	CN104-8 ESS PWB
12	CN104-10 ESS PWB

CN105	
Pin	Destination
1	Temp/Humid Sensor-1
2	Temp/Humid Sensor-2
3	Temp/Humid Sensor-3
4	Temp/Humid Sensor-4
5	Temp/Humid Sensor-5

CN106	
Pin	Destination
1	CN801-1 HVPS
2	CN801-2 HVPS
3	CN801-3 HVPS
4	No Connection
5	CN801-4 HVPS
6	CN802-1 HVPS
7	CN801-7 HVPS
8	CN801-5 HVPS
9	CN801-6 HVPS
10	CN802-2 HVPS
11	CN802-3 HVPS
12	CN802-4 HVPS
13	CN802-5 HVPS
14	CN801-8 HVPS

CN107	
Pin	Destination
1	CN1001-7 Bk Dev. Unit
2	CN1001-4 Bk Dev. Unit
3	CN1001-1 Bk Dev. Unit
4	CN1001-3 Bk Dev. Unit
5	CN201-3 Cassette PWB
6	CN201-4 Cassette PWB
7	CN201-5 Cassette PWB
8	CN201-6 Cassette PWB
9	CN201-7 Cassette PWB
10	CN201-8 Cassette PWB
11	CN201-9 Cassette PWB
12	CN201-10 Cassette PWB
13	CN201-1 Cassette PWB
14	CN201-2 Cassette PWB
15	CN703-1 Power Supply
16	CN703-2 Power Supply
17	CN703-3 Power Supply
18	CN703-4 Power Supply
19	CN703-5 Power Supply
20	CN703-6 Power Supply
21	CN703-7 Power Supply
22	CN703-8 Power Supply
23	CN703-9 Power Supply
24	CN703-10 Power Supply
25	CN703-11 Power Supply
26	CN703-12Power Supply

CN108	
Pin	Destination
1	CN707-1 Power Supply
2	CN707-2 Power Supply

CN109	
Pin	Destination
1	CN3-1Cassette Harness
2	CN3-2Cassette Harness
3	CN3-3Cassette Harness
4	CN3-4Cassette Harness
5	CN3-5Cassette Harness
6	CN3-6Cassette Harness
7	CN3-7Cassette Harness
8	CN3-8Cassette Harness
9	CN3-9Cassette Harness

CN110	
Pin	Destination
1	CN1003-1 Fusing Motor
2	CN1003-3 Fusing Motor
3	CN1003-4 Fusing Motor
4	CN1003-6 Fusing Motor
5	CN1003-5 Fusing Motor

CN111	
Pin	Destination
1	Paper Feed Motor
2	Paper Feed Motor
3	Paper Feed Motor
4	Paper Feed Motor
5	Paper Feed Motor

CN112	
Pin	Destination
1	Main Motor
2	Main Motor
3	Main Motor
4	Main Motor
5	Main Motor

CN113	
Pin	Destination
1	CN1007-2 Laser Intlk.
2	Laser Scanning Unit
3	Laser Scanning Unit
4	Laser Scanning Unit
5	Laser Scanning Unit
6	Laser Scanning Unit
7	Laser Scanning Unit
8	Laser Scanning Unit
9	Laser Scanning Unit
10	Laser Scanning Unit
11	Laser Scanning Unit
12	Laser Scanning Unit

CN114	
Pin	Destination
1	Interlock Switch

CN115	
Pin	Destination
1	Black Mag. Clutch
2	Black Mag. Clutch
3	Cyan Mag. Clutch
4	Cyan Mag. Clutch
5	Magenta Mag. Clutch
6	Magenta Mag. Clutch
7	Yellow Mag. Clutch
8	Yellow Mag. Clutch
9	Mag. Roll Cleaner Sol.
10	Mag. Roll Cleaner Sol.
11	Cyan Toner Sol.
12	Cyan Toner Sol.
13	Magenta Toner Sol.
14	Magenta Toner Sol.
15	Yellow Toner Sol.
16	Yellow Toner Sol.

CN116	
Pin	Destination
1	Color Toner Motor
2	Color Toner Motor

CN117	
Pin	Destination
1	CN1005-1 Dev. Motor
2	CN1005-2 Dev. Motor
3	CN1005-3 Dev. Motor
4	CN1005-4 Dev. Motor

CN118	
Pin	Destination
1	CN1009-10 Color Dev.
2	CN1009-11 Color Dev.
3	CN1009-9 Color Dev.
4	CN1009-7 Color Dev.
5	CN1009-21 Color Dev.
6	CN1009-17Color Dev.
7	CN1009-15 Color Dev.
8	CN1009-8 Color Dev.
9	CN1009-16 Color Dev.
10	CN1009-22 Color Dev.

CN119	
Pin	Destination
1	Exhaust Fan CN1006-1
2	Exhaust Fan CN1006-2

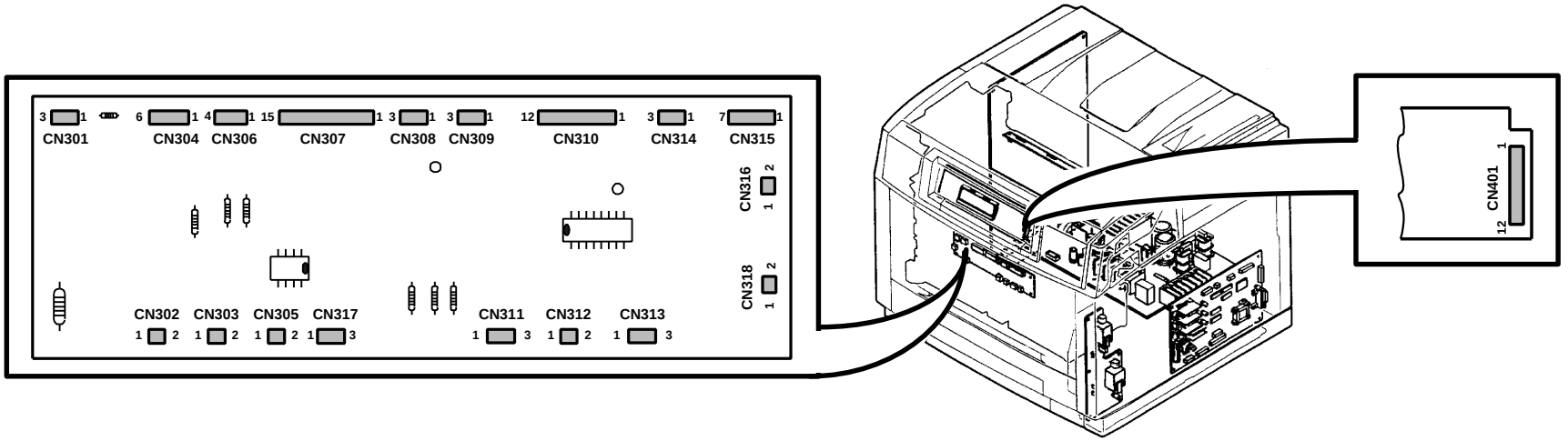


Figure 7-2. Connector PWB Connectors

CN301	
Pin	Destination
1	CN401-1 Gamma PWB
2	CN401-2 Gamma PWB
3	CN401-3 Gamma PWB
CN302	
Pin	Destination
1	CN501-1 Discharge Lamp
2	CN501-2 Discharge Lamp
CN303	
Pin	Destination
1	Stripper Solenoid
2	Stripper Solenoid
CN304	
Pin	Destination
1	CN103-8 PCU PWB
2	CN103-9 PCU PWB
3	CN103-11 PCU PWB
4	CN103-12 PCU PWB
5	CN103-10 PCU PWB
6	CN103-7PCU PWB
CN305	
Pin	Destination
1	CN1013-1 Fan Motor
2	CN1013-2 Fan Motor
CN306	
Pin	Destination
1	CN1009-4 Fuser Assy.
2	CN1009-9 Fuser Assy.
3	CN1009-10 Fuser Assy.
4	CN1009-5 Fuser Assy.

CN307	
Pin	Destination
1	CN103-28 PCU PWB
2	CN103-27 PCU PWB
3	CN103-26 PCU PWB
4	CN103-25 PCU PWB
5	CN103-15 PCU PWB
6	CN103-13 PCU PWB
7	CN103-16 PCU PWB
8	CN103-14 PCU PWB
9	CN103-19 PCU PWB
10	CN103-18 PCU PWB
11	CN103-2 PCU PWB
12	CN103-1 PCU PWB
13	CN103-6 PCU PWB
14	CN103-4 PCU PWB
15	CN103-5 PCU PWB
CN308	
Pin	Destination
1	Paper Exit Sensor
2	Paper Exit Sensor
3	Paper Exit Sensor
CN309	
Pin	Destination
1	Oil Sensor CN1010-1
2	Oil Sensor CN1010-2
3	Oil Sensor CN1010-3
CN310	
Pin	Destination
1	CN401-1 Control Panel
2	CN401-2 Control Panel
3	CN401-3 Control Panel
4	CN401-4 Control Panel
5	CN401-5 Control Panel
6	CN401-6 Control Panel
7	CN401-7 Control Panel
8	CN401-8 Control Panel
9	CN401-9 Control Panel
10	CN401-11 Control Panel
11	CN401-10 Control Panel
12	CN401-12 Control Panel
CN311	
Pin	Destination
1	CN601-1 Transparency Sen.
2	CN601-2 Transparency Sen.
3	CN601-3 Transparency Sen.
CN312	
Pin	Destination
1	Bypass Switch
2	Bypass Switch
CN313	
Pin	Destination
1	CN1001-1 Transfer Drum Home Position Sensor
2	CN1001-2 Transfer Drum Home Position Sensor
3	CN1001-3 Transfer Drum Home Position Sensor
CN314	
Pin	Destination
1	Transparency JamSensor CN1011-3
2	Transparency Jam Sensor CN1011-2
3	Transparency Jam Sensor CN1011-1
CN315	
Pin	Destination
1	CN103-3 PCU PWB
2	CN103-17 PCU PWB
3	CN103-24 PCU PWB
4	CN103-23 PCU PWB
5	CN103-22 PCU PWB
6	CN103-21 PCU PWB
7	CN103-20 PCU PWB
CN316	
Pin	Destination
1	Transfer Drum Clean Sol.
2	Transfer Drum Clean Sol.
CN317	
Pin	Destination
1	Txfer Discharge Corotron-1
2	No Connection
3	Txfer Discharge Corotron-3
CN318	
Pin	Destination
1	Cleaner Jam Switch
2	Cleaner Jam Switch

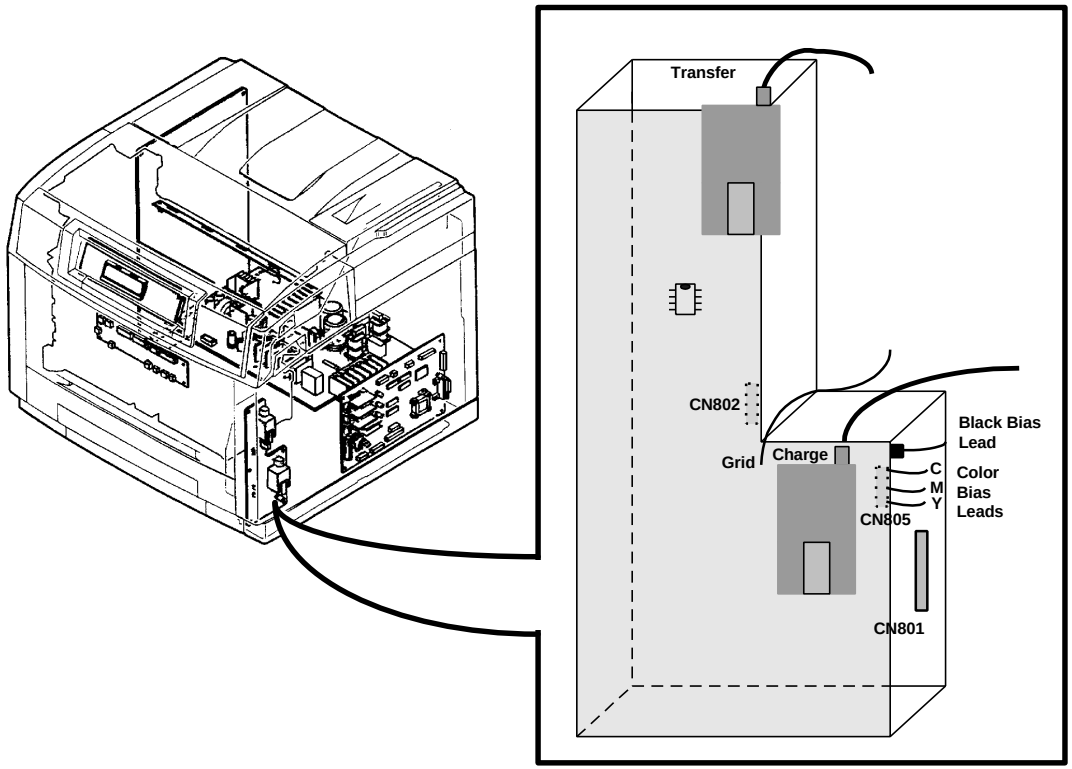


Figure7-3. High Voltage Power Supply PWB Connectors

CN801	
Pin	Destination
1	CN106-1 PCU PWB
2	CN106-2 PCU PWB
3	CN106-3 PCU PWB
4	CN106-5 PCU PWB
5	CN106-8 PCU PWB
6	CN106-9 PCU PWB
7	CN106-7 PCU PWB
8	CN106-14 PCU PWB

CN802	
Pin	Destination
1	CN106-6 PCU PWB
2	CN106-10 PCU PWB
3	CN106-11 PCU PWB
4	CN106-12 PCU PWB
5	CN106-13 PCU PWB

CN803	
1	CN1009-24 Color Dev Assy.
3	CN1009-13 Color Dev Assy.
5	CN1009-2 Color Dev Assy.
Black Developer Bias	
Pin	Destination
NA	CN1001-8 Black Dev Assy

Charge Connector	
Pin	Destination
NA	Charge Spring Plate
Grid Connector	
Pin	Destination
NA	Grid Spring Plate
Transfer Connector	
Pin	Destination
NA	Transfer Spring Plate

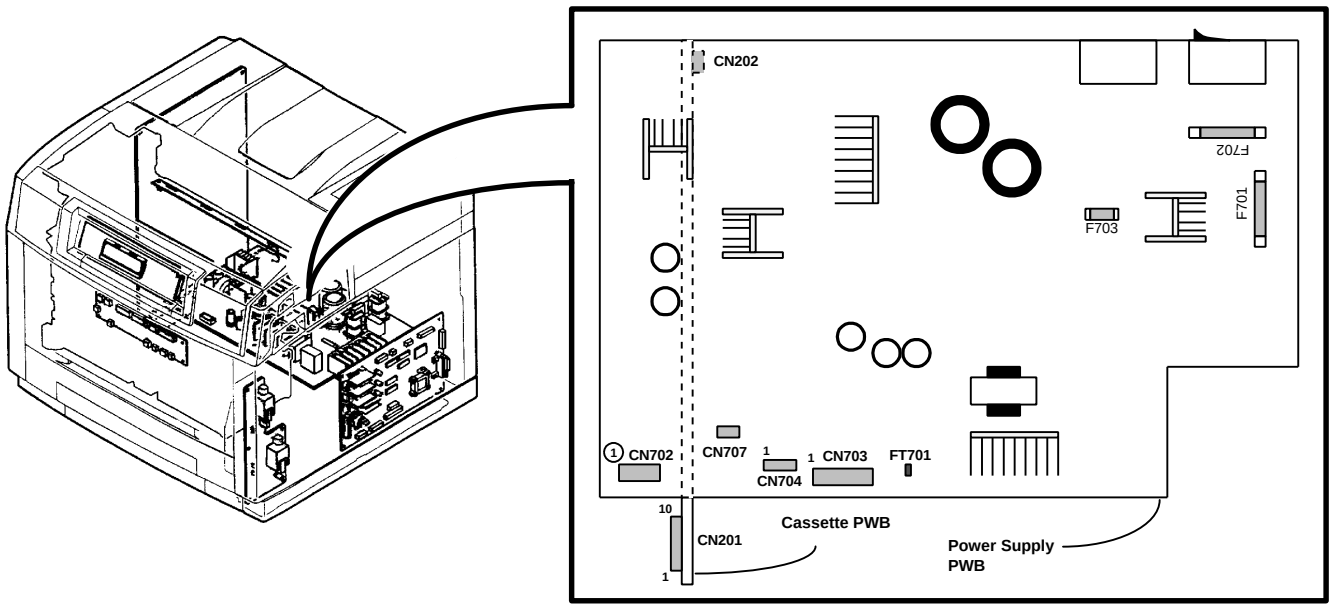


Figure 7-4. Low VoltagePower Supply PWB/Cassette PWB Connectors

Power Supply PWB

FT701	
Pin	Destination
1	Interlock Switch

CN702	
Pin	Destination
1	CN104-1 ESS PWB
2	CN104-2 ESS PWB
3	CN104-13 ESS PWB
4	CN104-14 ESS PWB
5	CN104-15 ESS PWB
6	CN104-16 ESS PWB
7	CN104-17 ESS PWB
8	CN104-18 ESS PWB
9	CN104-19 ESS PWB
10	CN104-20 ESS PWB

CN703	
Pin	Destination
1	CN107-15 PCU PWB
2	CN107-16 PCU PWB
3	CN107-17 PCU PWB
4	CN107-18 PCU PWB
5	CN107-19 PCU PWB
6	CN107-20 PCU PWB
7	CN107-21 PCU PWB
8	CN107-22 PCU PWB
9	CN107-23 PCU PWB
10	CN107-24 PCU PWB
11	CN107-25 PCU PWB
12	CN107-26 PCU PWB

CN704	
Pin	Destination
1	Photoreceptor Module
2	Photoreceptor Module
3	Photoreceptor Module

CN707	
Pin	Destination
1	CN108-1 PCU PWB
2	CN108-2 PCU PWB

Cassette PWB

CN201	
Pin	Destination
1	CN107-13 PCU PWB
2	CN107-14 PCU PWB
3	CN107-5 PCU PWB
4	CN107-6 PCU PWB
5	CN107-7 PCU PWB
6	CN107-8 PCU PWB
7	CN107-9 PCU PWB
8	CN107-10 PCU PWB
9	CN107-11 PCU PWB
10	CN107-12 PCU PWB

CN202	
Pin	Destination
1	FT1003-1 Black Toner Mot.
2	FT1003-2 Black Toner Mot.

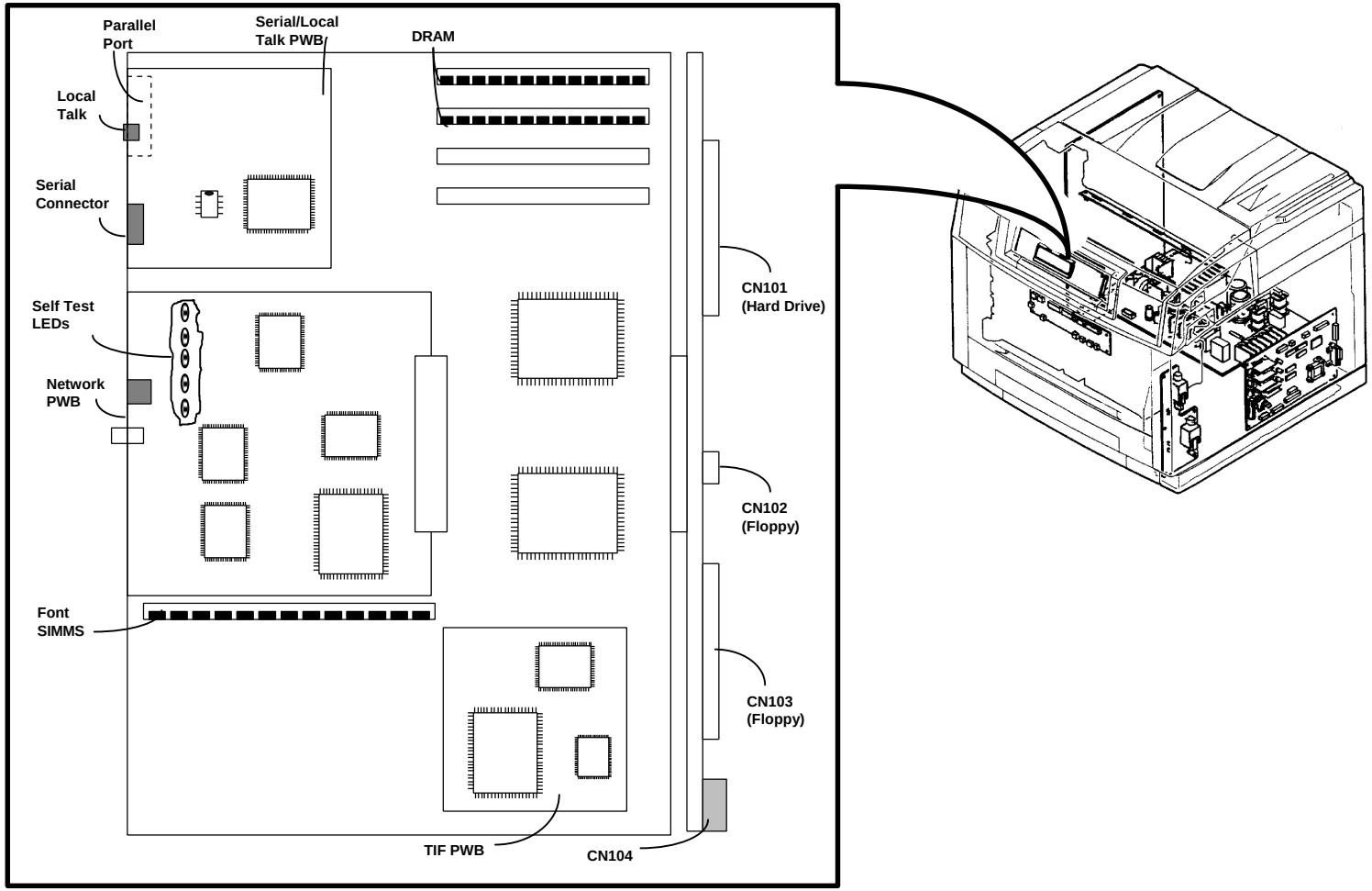


Figure 7-5. (C55/C55mp) ESS PWB Connectors

CN104	
Pin	Destination
1	CN702-1 LVPS
2	CN702-2 LVPS
3	CN104-8 PCU PWB
4	CN104-10 PCU PWB

5	CN104-2 PCU PWB
6	CN104-9 PCU PWB
7	CN104-6 PCU PWB
8	CN104-11 PCU PWB
9	CN104-1 PCU PWB
10	CN104-12 PCU PWB

11	CN104-5 PCU PWB
12	CN104-7 PCU PWB
13	CN702-3 LVPS
14	CN702-4 LVPS
15	CN702-5 LVPS
16	CN702-6 LVPS

17	CN702-7 LVPS
18	CN702-8 LVPS
19	CN702-9 LVPS
20	CN702-10 LVPS

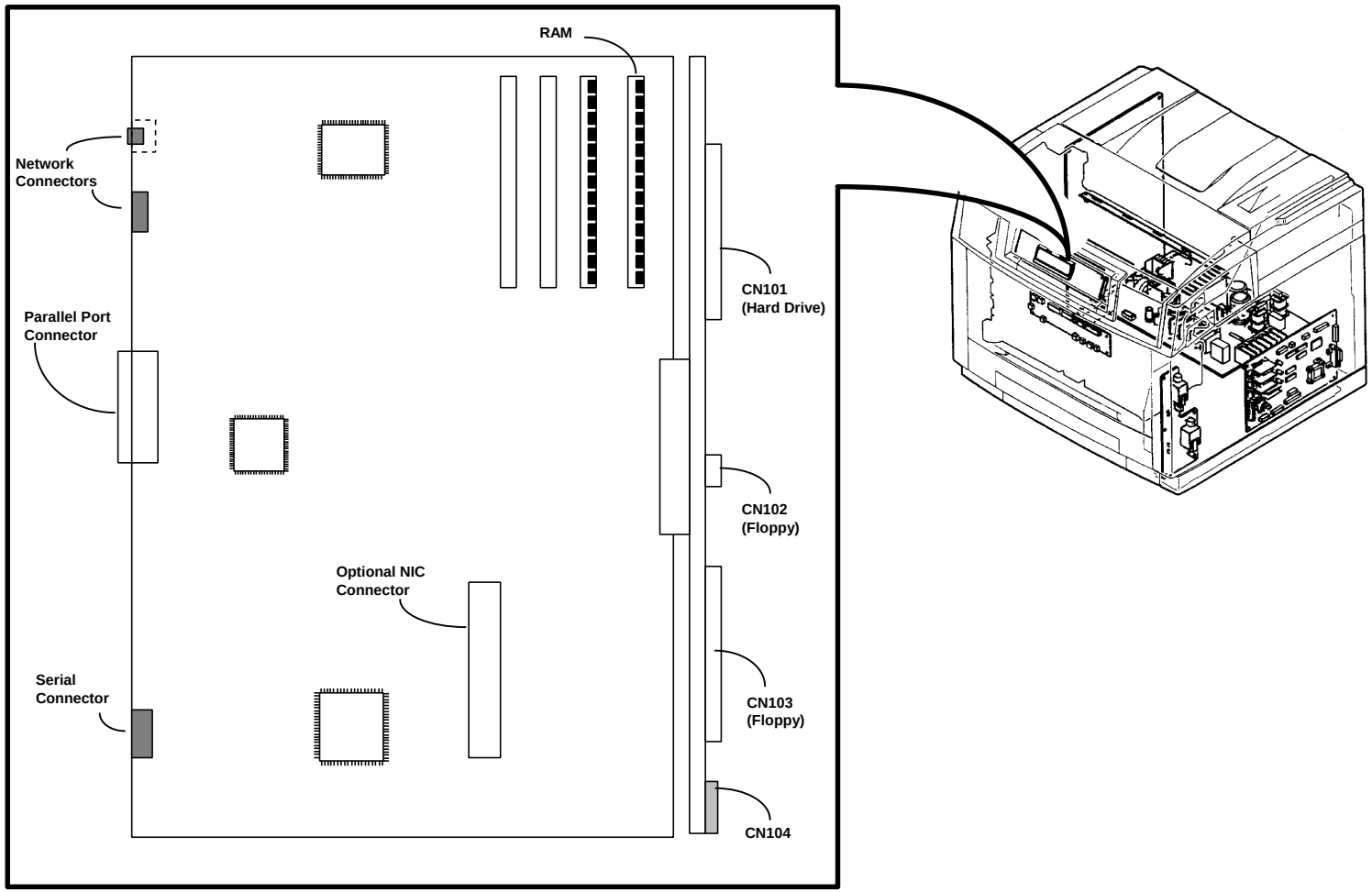


Figure 7-6. [NC60] ESS PWB Connectors

CN104	
Pin	Destination
1	CN702-1 LVPS
2	CN702-2 LVPS
3	CN104-8 PCU PWB
4	CN104-10 PCU PWB

5	CN104-2 PCU PWB
6	CN104-9 PCU PWB
7	CN104-6 PCU PWB
8	CN104-11 PCU PWB
9	CN104-1 PCU PWB
10	CN104-12 PCU PWB

11	CN104-5 PCU PWB
12	CN104-7 PCU PWB
13	CN702-3 LVPS
14	CN702-4 LVPS
15	CN702-5 LVPS
16	CN702-6 LVPS

17	CN702-7 LVPS
18	CN702-8 LVPS
19	CN702-9 LVPS
20	CN702-10 LVPS